AN ABRIDGEMENT OF Baron VAN SWIETEN's Commentaries UPON THE APHORISMS OF THE CELEBRATED Dr. HERMAN BOERHAAVE,

Late Profeſſor of Phyſic, &c. in the Univerſity of LEYDEN.

CONCERNING

The KNOWLEDGE and CURE of DISEASES.

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Quidquid percipies, eſto brevis; ut cito dicta
Percipiant animi dociles, teneantque fideles.
HORAT.

IN FIVE VOLUMES.

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M DCC LXXIII.


BRITISH MUSEUM

THE

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AN

ABRIDGEMENT
UPON THE
APHORISMS
OF
Dr. HERMAN BOERHAAVE.
CONCERNING THE
KNOWLEDGE and CURE of DISEASES.

Of INTERNAL DISEASES, and of FEVERS in general.

APHORISM DLVIII.

WE are now to explain the nature of a fever, which is the moſt frequent of all diſeaſes, inſeparable from inflammation, often the cauſe of many other diſorders, and of death itſelf; and, frequently, an effectual means of cure.

Having explained the moſt ſimple diſeaſes of the ſolid parts, as alſo thoſe which ariſe from a ſpontaneous degeneration of the humours; and, likewiſe, compleated the hiſtory of external diſorders; we come now to treat of internal diſeaſes, to diſcover their cauſes and effects, and the injured functions of the parts.

Indeed, the great number and variety of theſe diſeaſes occaſions no ſmall difficulty in determining

with which diſeaſe one ought to begin, in laying down the hiſtory of thoſe which are internal. But, to advance our doctrine in a methodical, and juſt order, we ſhall follow the rule preſcribed in the 4th N°. of the 16th Aph. as it agrees more with fevers than all the reſt of internal diſeaſes; namely, to begin *with ſuch as are neceſſary to be known, in order to underſtand other diſeaſes.*

Moſt frequent of all diſeaſes.] It will be demonſtrated hereafter in the comment to Aph. 586, that fevers ariſe from cauſes extremely numerous, and very different from each other. Errors in diet, the changes of air, violent exerciſes of the body, ſtrong paſſions of the mind, &c. frequently excite fevers, even in the moſt healthy perſons.

Inſeparable from inflammation.] This was alſo the opinion of Hippocrates, who ſays, that a fever accompanies all other diſeaſes, but more eſpecially an inflammation.

The cauſe of many other diſeaſes, &c.] As the velocity of the blood is increaſed in every fever, all the conſequences of an increaſed circulation, enumerated in Aph. 100, may reſult from a fever, as a cauſe. But it may, perhaps, appear not ſo credible to ſome, that a fever, itſelf a diſeaſe, ſhould be an effectual means of curing other diſeaſes: yet nothing is more certain than this aſſertion, which is confirmed by faithful obſervations made in all ages. Hippocrates tells us, "that an apoplexy may be cured by "a fever," though he had before pronounced a violent apoplexy incurable, and a ſlight one, very difficult to remove[a]. And, in another place, he ſays, "If a drunken perſon ſuddenly loſes his ſpeech, "he dies convulſed, unleſs he ſhould be taken with "a fever, or recover his ſpeech, when the drun-"ken fit is over." "That convulſions, and even "a tetanos, are cured by a fever," that a quartan ague, though of long continuance, is without dan-

[a] Aph. 42. Sect. 2.

ger

ger, and a preventive of many other diſeaſes. There are many other ſalutary effects of fevers recorded by Hippocrates, a great part of which is collected by *Celſus*. Lib. 2. cap. 8.

They are, therefore, miſtaken, who think that a fever is always to be ſuppreſſed by all the aſſiſtance of art, as nature, by means of a fever, often ſubdues diſeaſes, that would otherwiſe elude the moſt efficacious remedies. Sydenham, for this reaſon, juſtly calls a fever, an inſtrument of nature, by which ſhe ſeparates the morbid particles from the ſound, or elſe changes the blood into ſome new ſtate.

APH. DLIX.

AS, therefore, the nature of a fever is thought to be concealed from us, we ought, by all means, carefully to avoid all error in ſearching out the nature of it.

We are not to aſſume any thing from hypotheſis, however ingenious it may ſeem, but only to conſider the appearances of the fever, and weigh each of them apart, that, by afterwards comparing them together, we may, by juſt reaſoning, be led to a knowledge of the proximate cauſe of the fever.

APH. DLX.

BUT the great number of ſymptoms, which generally attend fevers, though they may be likewiſe without them, leads a phyſician more eaſily into error.

If we examine the ſymptoms of fevers, it will be evident, that there is no function in the body that

has not been injured ſometimes during a fever. Sometimes it is attended with a vomiting, nauſea, loſs of appetite, gripes, a diarrhæa, &c. at another time, there ſhall be extreme hunger. Sometimes, there are pains in various parts of the body, at another time, the pains ceaſe during the time of the fever, and return again, when the fever ceaſes. This great number and variety of febrile ſymptoms has led many into error, by endeavouring to find out the nature of the fever, from only ſome of theſe ſymptoms, as they have more or leſs favoured a preconceived hypotheſis. But as many of theſe ſymptoms vary in almoſt every feveriſh patient, and, likewiſe, in the different ſpecies of fevers, it is evident, that the nature of a fever cannot be diſcovered from ſymptoms, which may be ſeparated from the fever. Theſe may ſerve to diſtinguiſh the different kinds of fevers, but never can diſcover the individual nature of one.

APH. DLXI.

TO avoid this error, it will be neceſſary to ſelect, from innumerable ſymptoms, thoſe only which always attend every fever; and whoſe preſence makes the phyſician ſenſible that there is actually a fever, and whoſe abſence ſhews, that the patient is free from a fever.

Though phyſicians may differ about the cauſes and nature of fevers, yet all of them are able to diſtinguiſh, whether a ſick perſon has a fever or not. There are, therefore, ſome ſymptoms preſent in every fever, by which they are aſſured that there is one; and theſe will be preſent, as well in continual fevers, as intermittents; in a ſalutary ephimera, as in the moſt ardent fever. All the other ſymptoms, which appear only in ſome fevers, and do not at all times, are, therefore, to be rejected; and, thus, we ſhall avoid all

all the confuſion ariſing from ſuch a multiplicity of ſymptoms; and, the whole enquiry reduced to the greateſt ſimplicity.

APH. DLXII.

AND then, from theſe ſymptoms (561), duly diſcovered, and rightly conſidered, the individual nature of the fever will be found out.

Boerhaave, after collecting all the ſymptoms he had obſerved in fevers, found, that the following only, were preſent in every fever.

APH. DLXIII.

IN every fever, ariſing from internal cauſes, there is always a ſhivering, a quick pulſe, and heat, varying in degree at different times of the fever.

Theſe are the only ſymptoms common to all fevers. This ſhivering, or ſenſe of cold, attends every fever ariſing from internal cauſes. By an internal cauſe, we mean that producing the fever, which pre-exiſted in the body before the fever, whether, at firſt, without the body, and received into it, or generated within the body itſelf. Thus, for example, the contagion of the plague, or that of the ſmall-pox, &c. taken into the body, excites a fever, but always preceded with a ſhivering, although the cauſe itſelf is not generated in the body, but conveyed into it from without. Corrupted bile, alſo, kindles a fever, which always begins, likewiſe, with this ſhivering. In both theſe caſes, the fever is ſaid to ariſe from an internal cauſe. But, when a fever ariſes from external cauſes, then the

ſhivering does not always attend: for example, a fever from ſudden, and violent anger, has no ſhivering, but heat only. The ſame is alſo true, in acute fevers, excited from ſtrong and long continued exerciſe; therefore, it is ſaid in the text, that theſe three ſymptoms are preſent in every fever ariſing from internal cauſes

The quickneſs of the pulſe is meaſured by the exceſs of its celerity above what it is in health; but there is a great difference in the pulſe in different people; and, in infants, it is quicker than in adults. In a healthy man, and at reſt, the pulſe beats three thouſand ſix hundred times in an hour; when the artery beats oftener, in this ſpace of time, the pulſe is ſaid to be quick. The fibrile heat is meaſured by comparing that with the heat of a perſon in health.

But theſe three ſymptoms do not attend together through the whole courſe of the fever; for the ſhivering begins with the fever, and, is then, followed with heat, gradually increaſing, and moſt intenſe in the height of the fever, decreaſing again, by degrees, with the fever itſelf. But, ſometimes, the ſhivering, as in ſemitertians, accompanies the fever, through its whole courſe, a new paroxiſm coming on before the firſt is quite finiſhed.

APH. DLXIV.

THE fever, in which the three above mentioned ſymptoms run on ſwiftly, and with danger, is called an acute fever.

To denominate a fever acute, it is not ſufficient that theſe three ſymptoms, common to all fevers, ſhould advance ſwiftly, but that, alſo, the life of the patient ſhould be in danger, or, at leaſt, reaſon to fear it from ſuch a fever: for acute diſeaſes are ſhort and ſevere, ſoon killing the patient, or ſoon terminating themſelves.

APH.

APH. DLXV.

BUT when theſe three inſeparable ſymptoms of a fever advance ſlowly, with, or without danger, the fever is ſaid to be ſlow.

APH. DLXVI.

BOTH theſe ſpecies of fevers are either epidemical, or common to a whole people, or only peculiar to this, or that perſon, and are then called ſporadic.

We come now to another diviſion of fevers, to which both the other kinds are equally ſubject, namely, into epidemical, or particular fevers. The former ariſe from ſome common cauſe, have uſually the ſame courſe and ſymptoms, and require the ſame method of cure in all; but the latter, ariſing from very different cauſes, require a different treatment almoſt in every individual.

APH. DLXVII.

THOSE are called acute, febrile diſorders which are accompanied with an acute fever (564); but thoſe are called chronical *febrile caſes*, which are attended with a ſlow fever, (565).

As all inflammatory diſeaſes are attended with a fever, the hiſtory of fevers, taken in its greateſt latitude, would include the greateſt part of diſeaſes, which would occaſion great confuſion. And, as in theſe diſeaſes, a different method of cure is required, ſuitable to the nature of the part affected, it is evi-

dent, that the hiſtory of inflammatory diſeaſes ought to be delivered apart, though each of them are attended with a fever; yet they are attended with ſome particular ſymptoms ariſing, not from the fever, but from the part affected; hence pleuritic, peripneumonic, hepatic, and other fevers.

APH. DLXVIII.

HENCE the explanation of all theſe acute and chronical febrile diſorders, is founded upon a previous knowledge of the nature of the fever.

APH. DLXIX.

WHICH knowledge is to be derived from a conſideration of the three ſymptoms common to all fevers, namely, a ſhivering, a quick pulſe, and heat.

See the comment to Aph. 13. But here great care ſhould be taken to avoid any pre-conceived hypotheſis. How egregiouſly have thoſe erred, who, neglecting experience, have endeavoured to diſcover the cauſes of natural things by reaſoning only! For, as the incomparable Sydenham wiſely obſerves, "If we "attend to what nature actually performs, and ob- "ſerve what inſtruments ſhe uſes in her work, we "may diſcover her operations; but the manner in "which ſhe operates, will always be concealed." Thus, by obſervation, we diſcover, in every fever, that the velocity of the pulſe is increaſed, that the heart contracts more frequently, and thence again, that the cauſes which contract the heart are increaſed; but, in what manner thoſe cauſes act, which excite the heart to a quicker contraction, are hitherto concealed from all of us. For all we know of the nature

ture of a fever, we diſcover only by its inſeparable effects and appearances; therefore, the three common and inſeparable ſymptoms are to be conſidered, in order to know the nature of a fever.

APH. DLXX.

THESE ſymptoms, indeed, attend in every fever; but the quick pulſe only is preſent throughout the whole time of the fever, from the beginning to the end, and by that only the phyſician judges that there is a fever.

Neither the ſhivering, nor heat, are obſerved throughout the whole time of the fever. In the greateſt cold of a quartan there is a fever, though no heat is obſerved; and thoſe ſeem to trifle who ſay, that a heat attends during the febrile cold, and that it is only latent, and cannot be perceived. See the comment to Aph. 563.

APH. DLXXI.

AND, therefore, whatever the phyſician knows of a fever, entirely depends upon the velocity of the pulſe.

That an increaſed velocity of the pulſe only, ſhould be taken for an infallible ſign of a fever, has, for its ſimplicity, been diſpleaſing to many, eſpecially as this velocity is increaſed by ſuch ſlight cauſes as give little or no diſturbance to the body, ſuch as exerciſe, paſſions of the mind, full diet, &c. Certain it is, that a fever attends in theſe caſes, which vaniſhes immediately upon the ceſſation of thoſe ſlighter cauſes; but thoſe cauſes, longer continued, may excite the moſt dangerous fevers. Do we not find, that the moſt

moſt ardent fevers have aroſe from two violent exerciſes of body? Gluttony alſo has often raiſed a dangerous fever; and many, by exceſs of wine, have died apoplectic with an acute fever. It is not therefore to be wondered, that a ſlight fever ſhould be excited from ſlight cauſes.

APH. DLXXII.

THE proximate cauſe therefore of this veloſity of the pulſe, is likewiſe the proximate cauſe of the fever thus known.

For the proximate cauſe of a diſeaſe is that, whoſe preſence makes the diſeaſe, and whoſe abſence removes it. See the comment to Aph. 11.

APH. DLXXIII.

THIS cauſe therefore is a quicker contraction of the heart; and therefore is an affection of life, endeavouring to avoid death, as well in the cold fit, as in the heat of the fever.

As in every fever the motion of the heart is accellerated, it is juſtly ſaid to be an affection of life, endeavouring to avoid death. The truth of this is apparent in the cold fit of a fever, in which the coldneſs of the extremities denotes that the blood cannot be propelled to the ultimate extremities of the arteries; and that there are obſtacles in this caſe, which were not before. The pulſe is now quick and ſmall, the irritated heart endeavouring with all its force to overcome the reſiſtances; but when the febrile cold is followed by heat, the increaſed velocity of the heart's motion will continue, until the cauſe which diſturbed the equability of the circulation

tion is removed, or elſe ſo ſubdued as to be no longer hurtful.

APH. DLXXIV.

THIS quicker action of the heart therefore, infers a quicker reciprocal influx of the nervous fluid from the cerebellum into the muſcular fibres, as well as a quicker influx of the blood into the veſſels, and into the ventricles of the heart.

For the explanation of this aphoriſm, ſee Boerhaave's Inſtitut. Medic. Sect. 187.

APH. DLXXV.

ALMOST every fever, hitherto known, ariſing from an internal cauſe, begins firſt with a ſenſe of cold, ſhaking and ſhivering, more or leſs, of longer or ſhorter duration, either internal or external, according to the diverſity of conſtitution, and cauſes of the fever itſelf.

The firſt perceptible ſymptom of a fever is an unuſual coldneſs. Soon after this, the whole body begins to ſhake or tremble; but the degree of this coldneſs is various. Sometimes the external parts of the body, and eſpecially the extremities, feel the cold moſt, which is ſometimes alſo perceived in the internal parts, while the external ſkin is only naturally hot; but in the worſt kind of fevers there is an intenſe heat about the præcordia, while the extremities are as cold as marble. See Aph. 623. where we treat of febrile coldneſs.

APH.

APH. DLXXVI.

AT this time of the fever the pulſe is quick, ſmall, and often intermitting; the extremities are cold, pale, ſtiff, trembling, and inſenſible.

Cold.] In the comment to Aph. 100. we demonſtrated, that heat always proceeds from an increaſed motion of the blood, and that it decreaſes as this motion is diminiſhed. As therefore the force of the heart is in this ſtage of the fever ſo much weakened, that it cannot propel the blood to the extremities, it is evident there muſt be a coldneſs; for when the cauſes of animal heat are deficient, all the parts expoſed to the common air are reduced to the ſame temperature with the air itſelf, and they are then ſaid to be cold, becauſe the natural heat of the body always exceeds the heat of the air.

Pale.] The lively colour obſerved in healthy people, ariſes from the veſſels filled with red blood; but the force of the heart being weakened, and unable to propel the blood to the extremities, the arteries at the ſame time contracting themſelves by their own elaſticity, the blood is repelled from the ſmaller into the larger branches, and the ſubcutaneous arteries, being by this means in a great meaſure emptied, a paleneſs will ariſe.

Stiff.] In the beginning of a fever, the force of the heart being weakened, cannot fill the ſmalleſt veſſels in the extreme parts. But beſides this, the cold, which contracts every thing, will increaſe the coheſion of the ſolid parts, and conſequently augment their ſtiffneſs, in the ſame manner that the winter cold ſo ſtiffens the fingers, as to render them ſcarce able to take hold of any thing.

Trembling.] This ſhews that the two cauſes of muſcular motion are deficient, namely, the influx of

the arterial blood into the muſcles, and of the ſpirits into the nerves. Theſe cauſes therefore being diſturbed or interrupted, will produce a trembling, and that often ſo violent, as to cauſe pain in the limbs for ſome time after the fit is over.

Inſenſible.] This only happens in the moſt ſevere febrile cold; for then the blood ſtagnates in the larger veins and ſinuſes of the heart, as a little of it only can be propelled through the lungs by the action of the heart, as is evident from the great anxiety which always attend this very inſtant.

APH. DLXXVII.

HENCE it is evident, that the blood at this period of the fever ſtagnates in the capillary veſſels, and that there is at the ſame time a cauſe irritating the heart (574.)

That the fluids may have a free paſſage through the veſſels, it is neceſſary that their particles ſhould be leſs than the diameter of the ſmall capillary arteries, that theſe veſſels ſhould retain their due amplitude, and that the moving cauſes ſhould have a force ſufficient to propel the humours through the veſſels; but all theſe cauſes are wanting in this ſtage of the fever.

APH. DLXXVIII.

FROM theſe two circumſtances, namely, a ſtagnation in the capillary veſſels, and an irritation of the heart, we learn the cauſe of all the ſymptoms which then appear (575, 576.) For the venal blood ſent to the right ventricle of the heart through the veins, contracted by the coldneſs of the extremities, will irritate the

the heart; and the left venticle, unable to overcome the reſiſtance at the extremities of the arteries, will indeed beat the quicker, but will be contracted with leſs force than in health. But the left venticle of the heart, by the intervention of that wonderful organ the cerebellum, is itſelf the cauſe of its own muſcular motion; for the action of the cerebellum on the heart by means of the nerves, depends upon the action of the heart itſelf on the cerebellum by the arteries; for as the left venticle of the heart then propels the blood, with leſs force through the arteries of the cerebellum, this laſt muſt therefore act with leſs efficacy upon the heart by the nerves.

APH. DLXXIX.

IN every fever, after the ſymptoms enumerated in Aph. 575 to 577, there ariſes a heat more or leſs, of longer or ſhorter duration, either internal, external, univerſal, or local, according to the different nature of the fever.

This heat varies in degree, duration, and place, according to the different nature of the fever. In an ephimera, and the ſynochus ſimplex, or ſimple continent, the heat is gentle, and the moiſture a little more than natural; but in the putrid continent it is much more intenſe, and in a manner pungent to the touch. In a true ardent fever it is burning to the fingers, and the expired air itſelf feels hot. In a true and exquiſite tertian the heat continues but for a few hours; but in continual fevers for ſome days, and even weeks, and in hectic fevers, for many months.

It is one of the beſt ſigns when the febrile heat is equally diffuſed; for it ſhews that the veſſels are pervious,

vious, and that the circulation is free. In the worſt fevers, there is ſometimes an intenſe heat about the vital organs, while, at the ſame time, the extremities are cold; this ſhews that the circulation is deficient, and that the impervious blood begins to ſtagnate about the vital viſcera; while the heart being more ſwiftly contracted, propels the blood with a greater veloſity through the veſſels which are yet pervious in the adjacent parts.

But when a fever is attended with an inflammation of ſome particular part, then the heat is greateſt in the part affected, though the body is likewiſe violently heated, as the head in a true phrenitis, the fauces in an inflammatory quinſy, &c.

APH. DLXXX.

WHICH heat, as it follows the fever already formed, is evidently more the effect of one, than the cauſe or eſſence of a fever.

It evidently appears from what has been ſaid, that a true fever is preſent before there is an increaſed heat, therefore the eſſence of a fever cannot conſiſt in heat, nor can heat be termed the cauſe of a fever, becauſe a cauſe would then follow its effects, which it muſt precede; yet Galen and his followers affirmed, that it conſiſted in an increaſed heat.

APH. DLXXXI.

AND therefore a quicker contraction of the heart, with an increaſed reſiſtance at the capillary veſſels, compleats the idea, or eſſence of every acute fever.

We have already demonſtrated, that a quick pulſe is the pathognomic ſign of every fever; the proximate

proximate cauſe of which is a quicker contraction of the heart; but when this quicker contraction of the heart is attended with an increaſed reſiſtance at the extremities of the arteries, we then have the idea of an acute fever, which is dangerous as well as ſwift in its progreſs.

APH. DLXXXII.

BUT both theſe, namely, a quicker contraction of the heart, and an increaſed reſiſtance at the capillaries may be produced in a living animal by cauſes infinite in number and variety; and as they may happen either jointly or ſeparately, ſo when one is produced, the other eaſily follows.

It is evident from what we have ſaid in the comment to Aph. 100, concerning the effects of an increaſed velocity of the blood, that the more fluid parts will be expelled, and a dryneſs and inflammatory vicidity ariſe, by which it will be rendered unfit to circulate freely through the narroweſt extremities of the arteries. On the other hand, if the reſiſtance about the capillary arteries is increaſed, the contraction of the heart muſt alſo be ſoon increaſed; for the three cauſes upon which the motion of the heart depends will be oftener applied in a given time, and conſequently the heart will be the more frequently contracted.

APH. DLXXXIII.

THEREFORE the proximate cauſe of a fever may have an infinite number of proximate cauſes.

APH.

APH. DLXXXIV.

WHICH, however, are divided into ſuch as are peculiar to every individual, or univerſal and common to moſt people; and theſe generally depend on the ſtate of the air, on diet, and the way of living.

The firſt diviſion of theſe cauſes is into thoſe peculiar to every individual, and may therefore be different in every one; thus, one has a fever from a ſurfeit, another from overwatching, a third from too much exerciſe of body, &c. The ſecond diviſion into ſuch as are common to many people at the ſame time; thus the cauſe ſpreading a fever, frequently reſides in the air, and is attended with the ſame ſymptoms in every patient. Theſe common cauſes of fevers are often owing to diet, and bad proviſions. Hippocrates remarks, that the uſe of ſtagnant waters in the winter, excited peripneumonic and maniacal diſorders in young people, and ardent fevers in the old. But how the ſame courſe of life expoſes our bodies to the like diſeaſes has been taught by Ramazine, in his treatiſe on the diſeaſes of tradeſmen.

APH. DLXXXV.

THE cauſes therefore of a fever are either ſingular or epidemic.

APH. DLXXXVI.

THE more immediate ſingular cauſes of fevers may be reduced to certain heads; as 1. The ingeſta, or acrid aliments, whether

under the denomination of food, drink, ſauces, medicines, or poiſons, having ſuch properties that they cannot be digeſted, moved through, or diſcharged out of the body; or when taken in ſuch quantities as to irritate, ſuffocate, obſtruct, or putrefy. 2. The retenta, or things retained within the body, which ought to be expelled, whether their retention be owing to cold, unctions, ſorrowful affections of the mind, meats, drinks, medicines, poiſons, a damp foggy air, reſt, a neglect of uſual exerciſe, obſtructions and compreſſions of the veſſels, either from their contents, or from ambient bodies. 3. The geſta, or too much exerciſe either of the mind, or the body, heat, &c. 4. The *applicata*, or things applied externally to the body, that are acrid, pungent, corroding, burning, or inflaming. 5. Such things as produce great alterations in the humours and their motions, which many externals as well as internals will do; as hunger, evacuations, matter, water, ichor in thoſe who have a dropſy, or empyema; a ſharp ſerum collected in any part, exalted bile, an inflammation, ſuppuration, gangrene, cancer, overwatching, too intenſe ſtudy of any kind, exceſſive venery, &c.

Many of the cauſes here enumerated, do not excite a fever in all, but only in thoſe who are prediſpoſed; for, as we have already obſerved, the cauſes of diſeaſes are either prediſpoſing or occaſional. The firſt are ſo called, becauſe they prediſpoſe the body to diſeaſe upon the acceſſion of another cauſe, which would not have been ſufficient of itſelf to produce the diſeaſe, without the intervention of thoſe prediſpoſing cauſes. Thus, a difficult digeſtion does not

raiſe

raiſe a fever in every one, nor in one who labours hard in the ſcorching heat of the ſummer; but in thoſe who are plethoric, or naturally of a hot conſtitution.

The procataretic, or occaſional cauſes of fevers, are ranked in four claſſes, that the phyſician may better retain them in his memory, and by knowing the cauſe of the fever, may determine what method of cure, and what remedies are required to remove it.

1. Ingeſta.] Naturally all the humours of the body are without acrimony, except the urine and the bile. But then ſuch things as have a notable acrimony, may be received into the body from without. The *primæ viæ* do often contain acrimony, which, if it were received into the blood, would immediately diſturb all the functions. Indeed there is a faithful monitor placed here, to prevent any thing acrid from eaſily getting into the blood, namely, a contraction of the mouths of the abſorbing veins and lacteal veſſels. But yet it cannot be denied but part of the acrid ingeſta does ſometimes get into the blood; for the ſucking infant has been thrown into convulſions by the milk of a drunken nurſe. A purge taken by a nurſe, will often have the ſame effect in an infant, and the ſmell of garlick eaten may be perceived in the milk. A ſlight acrimony in the blood may, by the action of the veſſels and viſcera, be diſcharged from the body; but while it is in the blood, it muſt increaſe the velocity of the circulation by its ſtimulus.

Food.] Which is either already acrid, or becomes ſo by ſtaying too long in the warm ſtomach. Thus milk, in weak people, generally turns ſour; and the fleſh of animals, which live upon others, eaſily degenerates into a putrid acrimony.

Drink.] Namely, when made by fermentation. For new ale, milk, whey, and the like, never offend by their acrimony, unleſs they are already ſour, or

become ſo in weak bodies. But the acrimony in fermented liquors does, by its ſtimulus, increaſe the motion of the heart; and it is well known, that an immoderate uſe of theſe liquors will excite crapulary fevers, though they are often deſpiſed by thoſe who accuſtom themſelves to drinking. See inſtances of the fatal effects of drinking in the third book of the Epidemics of Hippocrates.

Sauces.] All theſe are uſually made of the moſt acrid ſpices, as pepper, garlick, onions, &c. with the addition of ſalt, vinegar, wine, and other things. All theſe, as they conſiſt of the moſt ſtimulating ſubſtances, may eaſily excite a fever.

Medicines.] In chronical and cold diſeaſes, as the dropſy, palſy, and ſome kinds of apoplexies, the ſtrongeſt ſtimulants are required in order to raiſe a fever. But ſometimes vomiting and purging medicines excite great diſturbance in the body, and too much increaſe the quickneſs of the circulation, tho' the diſeaſe to be cured requires the motion of the blood to be ſedate. For this reaſon Sydenham adviſes, that when a purge or vomit is neceſſary in acute continual fevers, bleeding to be premiſed, to prevent the too great agitation of the blood ariſing from the operation of theſe medicines.

Poiſons.] There are ſome poiſons that are manifeſtly acrid to the ſenſes, as arſenick, corroſive ſublimate, &c. And it is certain, that not only ſudden death, but alſo the moſt obſtinate malignant fevers have been raiſed by taking of poiſons. But there are other poiſons which diſturb the whole, excite acute fevers, and even kill, though they have no ſenſible acrimony, as the viperine poiſon, which reſembles in colour and taſte the oil of ſweet almonds.

Having ſuch properties, &c.] Our *ingeſta* are ſaid to be digeſted when they are ſo changed by the action of the veſſels and viſcera, as to become like the humours of our body. It is therefore neceſſary that

that the concoctive powers ſhould be able to overcome the coheſion or tenacity of what is taken into the body. Two cauſes may therefore impede the digeſtion, viz. a weakneſs of the aſſimilating powers, and too great tenacity of the aliments taken. The hardy plowman eats beef and fat bacon ſalted and dried in the ſmoak, and is even nouriſhed thereby, while a weak girl would be oppreſſed and made feveriſh with the ſame diet. It is likewiſe certain, from daily obſervation, that thoſe who eat too much, though it be food of eaſy digeſtion, become indiſpoſed, grow hot, thirſty, have a quick pulſe, and are really in a fever. Such ſlight fevers in healthy people are indeed eaſily removed; but in the weaker ſort, a very intenſe fever is ſometimes kindled.

Or, when taken in ſuch quantities, &c,] The aliments we take may not only offend in their qualities, but alſo in their immoderate quantity: for when a healthy perſon eats more than his ſtomach can bear, he is troubled with loathings and ſickneſs, till at laſt the ſtomach being irritated, frees itſelf by vomit. It is a very dangerous diſorder, when the ſtomach is extremely diſtended by too great a quantity of aliments rarefied by heat; for both the orifices have been obſerved, in this caſe, to contract themſelves ſo violently with a convulſive force, as to occaſion an intolerable anxiety, fruitleſs endeavours to vomit, and at laſt a fatal apoplexy, the trunk of the aorta deſcendens, being preſſed by the diſtended ſtomach, ſo as to urge the blood with great impetus, and in too great quantity upon the *encephalon*, and ſometimes rupture its veſſels. Add to this, that the aliments retained long in the ſtomach and inteſtines, corrupt ſpontaneouſly, and produce the worſt kind of putrefaction, as is evident from the vomiting of corrupt matter, and the fetid ſtools which follow after this ſort of gluttony.

2. It is certain that fevers frequently ariſe from a retention of the menſes, and from a ſuppreſſion of

the lochia in lying-in women. Iſſues in any part, which daily diſcharge a conſiderable quantity of matter, when they are ſuddenly healed up, occaſion not only fevers, but alſo the moſt dangerous diſeaſes. The caſe is the ſame on healing of old ulcers, and drying up the herpes in infants, unleſs ſome other evacuations are ſubſtituted in their room.

Thoſe parts, which by too long retention in the body, would become injurious, are chiefly in a ſtate of health diſcharged by ſtool, urine, and perſpiration; for though there are other excretions in the body, yet they ſerve not ſo much to depurate the maſs of humours, as to preſerve the functions of particular parts, as the mucus of the noſe, the wax in the ear, &c. Urine retained long in the bladder, and becoming acrimonious by heat, may, by diſtending and eroding the bladder, excite an inflammation and fever, attended with the worſt ſymptoms, as we are aſſured from numerous obſervations. A ſuppreſſion of urine from ſome defect in the kidnies, or from a calculus obſtructing the ureters, will excite a fever, and ſooner or later bring on certain death, after it has firſt affected the brain. A ſuppreſſion of the inteſtinal diſcharge is indeed tolerable much longer, though not without danger.

That the whole body is perſpirable, was known to Hippocrates and the ancient phyſicians; but that the perſpiration alone exceeds all the other ſenſible evacuations taken together, and that a juſt proportion of it is of the laſt moment, as well for the preſervation of health, as for the cure of diſeaſes, was firſt taught by Sanctorius, and afterwards confirmed by Keill, and improved by the celebrated *de Gorter*. From the obſervations of theſe authors the reaſon will appear why the following particulars are ranked among the cauſes of fevers.

Cold.] It was obſerved in the comment to Aph. 117. that the particles of our fluids are made more compact by cold; and that the orifices of ſmall veſ-

ſels

ſels opening in the ſurface of the ſkin, may be contracted by cold, no one can doubt; therefore both theſe effects of cold muſt obſtruct perſpiration. From the obſervations of the above-mentioned writers we have the following general rule, "That perſpiration "is leſs at that time the thermometer indicates a "greater cold." But cold is above all moſt injurious, when it ſuddenly comes after great heat; for then fatal pleuriſies often ariſe. Hence Sanctorius adviſes us to avoid this pleaſing but deceitful cold air.

Unctions.] It is highly probable that fat ſubſtances obſtruct the perſpiratory canals; and for this reaſon, a ſlight anointing of the ſkin in ſome people even with the mildeſt oil, excites an eryſipelas, and often a fever. But unctions ſeem to have been uſed to leſſen too great a perſpiration; yet it may be juſtly doubted, whether unctions are always of ſuch bad conſequence as to raiſe a fever, ſince they were of general uſe among the ancients after bathing, and were uſed by the athletæ to prevent ſweating, without any bad conſequence. Reaumur prolonged the lives of inſects by leſſening their perſpiration, and it is not without reaſon he believes the ſame may be tried in the human ſpecies. For in cold countries, where people perſpire leſs, we find more long livers than in hot countries; and in winter, when the perſpiration is much leſs, we ſee people in as good health as in ſummer. Though it cannot be denied that many diſeaſes ariſe from an obſtructed perſpiration, yet it is not hitherto determined what quantity of *perſpirabile* is neceſſary in every one to maintain health. But it is probable that too much care to defend the body from the injuries of the air, increaſes the perſpiration beyond what is neceſſary. It is certain robuſt perſons perſpire but little, and are for this reaſon leſs liable to ſlight indiſpoſitions; but when they are attacked with violent diſeaſes, their illneſs is more dangerous, and their recovery more difficult.

Sorrowful affections of the mind.] Sanctorius obſerves, that grief and fear obſtruct perſpiration,—that being once obſtructed, grief and fearfulneſs of mind follow,—and that nothing promotes it more than chearfulneſs.

Meats, drink.] In what manner theſe may create a fever, has been explained a little before. But Sanctorius obſerves that perſpiration is much leſſened, by pork, muſhrooms, melons, and new figs and raiſins, &c.

Medicines.] Thoſe of the milder kind do not leſſen perſpiration, as Sanctorius obſerved of caſſia; but thoſe which powerfully evacuate do.

Poiſons.] For theſe raiſe much greater diſturbance in the body than medicines, and at the ſame time weaken the vital powers.

A damp foggy air.] This kind of fogs adheres to walls and marble pavements, and, being condenſed, run down in ſtreaks like oil; and ſometimes an unuſual heat attends, and then every one feels a ſenſe of heavineſs and wearineſs; which are certain ſigns of a diminiſhed perſpiration. At this time peripneumonies prevail, the perſpiration of the lungs being checked by ſuch a foggy air.

A neglect of uſual exerciſes.] How much exerciſe contributes to preſerve health, and ſtrengthen the body, has been before obſerved in the comment to Aph. 25. N°. 2. and to 28, N°. 2. Sanctorius obſerves, that by exerciſe the body becomes lighter, and that when perſpiration is deficient in healthy people, it is reſtored by exerciſe.

Obſtructions and compreſſions of the veſſels, &c.] An obſtruction ſuppoſes that the particles to be tranſmitted, are too bulky to paſs the capacity of the tranſmitting veſſel. (See Aph. 107.) Therefore the excretory ducts being obſtructed, thoſe particles will be retained which ought to be diſcharged. But among the cauſes of obſtruction we reckoned thoſe which diminiſhed the capacity of the veſſels by external

nal compreſſure, which muſt take place here. See Aph. 112.

3. The geſta, or too much exerciſe of the mind, &c.] See Aph. 99, 104, and 571.

Heat.] Sultry heat is one of the moſt frequent cauſes of fevers; for the fluid parts being exhaled, the reſt acquire an inflammatory denſity, and its motion through the capillaries reſiſted, and from this reſiſtance a quicker contraction of the heart, that is a fever.

4. The applicata, &c.] A thorn fixed in the fleſh, eſpecially in ſome tendinous part, has often excited a violent inflammation and fever. Cantharides applied to ſeveral parts of the body at one time, have frequently produced a fever with thirſt, a ſtangury, and bloody urine. What frightful maladies enſued from the application of a plaſter ſprinkled with coroſive ſublimate, may be ſeen in Degnerus de dyſenteria, p. 234. Theſe ſuffice to prove that a fever may ariſe from the external application of acrid ſubſtances.

5. The blood has ſome qualities which diſtinguiſh it from all other fluids; ſee Aph. 92; and it was demonſtrated in the comment to Aph. 97, that the fabric of the body formed blood which could not be imitated by any art known. This power of forming blood is poſſeſſed not only by perfect animals, but alſo by the tender ſtamen of the chick in the firſt days of incubation by the heat of the hen, of which there was not before the leaſt appearance. So long as the blood, poſſeſſed of all its neceſſary qualities, is moved through the veſſels, the animal is in health; but ſo ſoon as it degenerates from its natural ſtate, all the functions will be diſturbed, and the heart irritated by a vitiated blood, will beat quicker, and produce a fever. Thus, in the moſt healthy people, after eating a more than ordinary quantity of food, there is a manifeſt quickneſs of the pulſe, while a great quantity of crude chyle, mixed with the blood,

flows

flows through the veſſels; for this reaſon, weak people are immediately ſenſible of the leaſt error in diet, and more eſpecially, if the food eaten is difficult to digeſt. When the blood degenerates from its natural craſis in the pale virgin, a white fever ariſes; becauſe the blood, in theſe tender habits, cannot be elaborated to its laſt degree of perfection, and inſtead of good blood, a crude liquor flows through the veſſels.

But to form good blood, there muſt be a due motion of the humours through the veſſels; for the firſt appearance of red blood in the egg, is in that point where the pulſation is perceived. In like manner the chyle, formed from the aliments, circulates with the blood for many hours before it acquires the nature of blood. Whatever therefore greatly alters this motion of the fluids, may diſturb the office of ſanguification, and change it more or leſs from its natural ſtate.

But very great is the number of thoſe cauſes which may alter the motion and nature of the humours, and ſome of them ſo ſubtile as to appear only by their effects, and others in no ways diſcoverable by the ſenſes, as the virus of the ſmall-pox, plague, &c. We ſhall therefore enumerate the principal of theſe cauſes, that by the knowledge of them one may be able to judge of the reſt; for it would be difficult to recount them all.

Hunger.] Hunger is that ſenſation which ariſes in a healthy perſon, to give him notice that the body requires freſh aliments to reſtore thoſe parts which have been loſt by the actions of life and health. For when hunger has been ſuſtained for a long time, the blood is not ſupplied with ſweet chyle, all the humours then become acrid, and incline to putrefaction, the breath begins to ſtink, the urine turns very ſharp, and a fever, with thirſt, ariſes from the increaſed acrimony of the humours. How long hunger may be ſuſtained without deſtroying life, cannot be

be determined; but Hippocrates has told us, "That "if any attempt to faſt for ſeven days, without eat- "ing or drinking, moſt of them die within that time; "but that even thoſe who ſurvive it do nevertheleſs "die, although they are afterwards perſuaded to eat "and drink." An Engliſh woman is recorded to have lived only by the ſmell, without meat or drink, for the ſpace of an year, though kept under a perpetual guard, by order of Henry the eighth; and we are likewiſe told of a Scotchman living thus for ſeveral months. See Schenchius.

Evacuations.] If the quantity of our healthy humours be diminiſhed by profuſe evacuations, the proportion of crude chyle will be too great with reſpect to the concocted healthy humours; whence a diſpoſition of the fluids to become acrid, and putrefy. See Aph. 25. Hence great weakneſs of body after profuſe hæmorrhages, from wounds, abortions, &c.

But when the thinner humours ſeparated from the blood, are too plentifully diſcharged out of the body, the remaining maſs is more diſpoſed to run into concretions, being now deprived of its moſt fluid parts; from whence an inflammation may ariſe, which is always attended with a fever.

Matter.] Laudable matter long confined in a cloſe warm place, is by degrees attenuated and changed into a worſe ſtate, becoming ichorous and acrid; and then being eaſily abſorbed, it infects the whole maſs of blood with a purulent cacochymy; which is always attended with a ſlow fever.

Water, ichor, &c.] An incipient dropſy is hardly ever with a fever; for all the parts are cold and languid: but an inveterate dropſy is always accompanied with one, the ſtagnant waters at length turning putrid, part of which being abſorbed and mixed with the blood, by its ſtimulus raiſes a fever, and greatly increaſes the thirſt.

A ſharp ſerum, &c.] If ſcorbutic ulcers are ſuddenly healed up by drying medicines, without firſt correct-

correcting the ill ſtate of the humours, fevers, and the worſt conſequences may follow.

Exalted bile.] When the bile, the moſt acrid of all the natural humours, is by any cauſe rendered ſtill more acrimonious, it is then ſaid to be exalted, becauſe it frequently produces the moſt ardent fevers. That the bile is exalted by the ſummer heats, we are taught by obſervations from Hippocrates, even to the preſent times; for this reaſon, after very hot ſummers, autumnal bilious fevers are very common.

Inflammation.] This is evident from what was ſaid in the comment to Aph. 558.

Suppuration.] For this follows a preceding inflammation; and while the ſuppuration is forming, all the inflammatory ſymptoms are increaſed. See Aph. 387.

Gangrene.] For this is uſually the conſequence of a moſt violent inflammation: beſides the gangrenous matter being abſorbed, often excites a moſt putrid fever.

Cancer.] See the comment to Aph. 499.

Overwatchings.] For this exhauſts the ſpirits, which cannot be repaired but by ſleep. But as the inſenſible perſpiration is obſtructed by keeping too long awake, and as fevers frequently ariſe from an obſtructed perſpiration, too much watching may juſtly be ranked among the cauſes of fevers.

Too intenſe ſtudy of any kind.] This has almoſt the ſame effect with overwatching; for the ſpirits are diſſipated and conſumed, a wearineſs and heavineſs of the whole body follows, and often a greater weakneſs than after violent exerciſe; but this more eſpeciallyhappens when the mind is totally fixed upon only one object, as we read of Archimedes.

We have now enumerated thoſe cauſes which excite a fever; it now remains for us to conſider thoſe changes which happen in the human body from the fever itſelf.

APH.

APH. DLXXXVII.

THE effects of a fever are, a quicker expulſion and propulſion of the fluids, an agitation of the ſtagnant, and an intimate mixture of all; an attenuation of thoſe which reſiſt; a concoction, and ſecretion of the concocted humours, and a criſis, or critical diſcharge of that which, by its ſtimulus and coagulum, produced the fever; a change of the healthy humours into a diſeaſed ſtate, an alteration of the ſound parts into ſuch a ſtate as will enable the patient to bear things which he was not accuſtomed to before; an expreſſion of the thinneſt fluids, and an inſpiſſation of the reſt; a thirſt, heat, pain, anxiety, debility, laſſitude, a ſenſe of weight, and a loathing of food.

We ſhall now ſee what a fever will effect in the human body, ſo far as we conſider it abſtractly. The firſt effect then will be

A quicker expulſion and propulſion of the fluids.] This is evident from what has been ſaid in the comment to Aph. 573. In the cold fit of a fever, indeed, the blood often ſtagnates in the extremities of the veſſels; but even then the celerity of the blood expelled from the heart, is increaſed through the larger veſſels about the heart itſelf; for although in the cold fit the heart expels only a ſmall quantity of blood at each contraction, yet as it palpitates ſwiftly, it moves what was expelled with a greater celerity.

An agitation of the ſtagnant.] Some humours always ſtagnate even in health, in ſeveral parts of the body; and it is neceſſary for many uſes, that certain humours ſeparated from the blood, ſhould be accumulated and collected into particular cells or cavities. Thus

Thus the cyſtic bile ſtagnates in a receptacle proper to itſelf; fat is collected in the adipoſe membrane, where it ſtagnates almoſt without motion; and in mucous cryptæ of the ſtomach and inteſtines, there ſtagnates a thick humour, &c.—But beſides theſe, there are many humours collected into the cavities of the body, which are in motion, but ſtagnate in diſeaſes. Thus the cavities of the thorax, abdomen, &c. in the living animal, contain a moſt ſubtile vapour, which, in a diſeaſed ſtate, is collected and condenſed, and appears in the form of ſtagnate water, as we are taught by dropſies. When therefore the motion of the humours is increaſed by a fever, thoſe which in health ſtagnated, are likewiſe put in motion, as appears daily from practical obſervation. A fat perſon often looſes half his weight in an acute continual fever. The bile in its cyſt, which only diſtils ſlowly into the duodenum, being put into motion by a fever, will be reſorbed into the blood, and tinge the urine and eyes almoſt as in a jaundice. From all theſe it is evident, that an agitation of ſtagnant humours is an effect of a fever.

An intimate mixture of all.] For whatever is abſorbed by the veins, muſt paſs to the right ventricle of the heart, and from thence through the ſmall pulmonary arteries, conveyed by the veins into the left ventricle of the heart, by which it is drove into the aorta, and thus continually circulated.

An attenuation of thoſe which reſiſt.] This effect of a fever is of great importance in practice. For the adorable Creator has ſo formed the bodies, that when any thing is applied to it either as a ſtimulus, or an obſtacle, that diſturbs the equable circulation of the humours, either a new motion is excited, or that already ſubſiſting is increaſed. When the blood ſtagnates in the capillaries during the cold fit of an intermittent, the reſiſting matter is attenuated and ſubdued by the fever itſelf, the fit then terminates, and a free circulation is reſtored. Sydenham knew

this

this, and adviſes not to be too haſty in curing a fever by the bark, for fear of ſuppreſſing the motions which would remove the obſtructions.

A concoction.] When that cauſe, which, by its ſtimulus or coagulum, produced the fever, is by the fever ſo changed, as to be fit to be expelled the body; it is then ſaid to be concocted. This concoction is very different from that made by the converſion of the aliments into our own ſubſtance, by the action of the veſſels and viſcera. One is the preparation of things taken into the body, the other a maturation of morbid particles, to be expelled the body either by urine, expectoration, ſtools, &c.

A ſecretion of the concocted humours.] Though the matter concocted in fevers is rendered mild, and leſs capable of injuring the actions of the body; yet there is often ſuch qualities in it, as will not permit an aſſimilation of it into healthy humours. In ſuch caſe then the matter being collected in ſome particular part, forms an abſceſs by tranſlation, as will be afterwards demonſtrated.

A criſis, or critical diſcharge, &c.] It has been often diſputed, whether the obſervations, which have been handed down to us by the ancients, concerning the criſes of diſeaſes, hold true in thoſe which happen in our days. Hollerius ſays, that thoſe critical perturbations, which the ancients called *criſes*, rarely happen among us; and this he believed to proceed from the difference of our climate, an intemperate way of living; or, becauſe phyſicians frequently weaken nature by bleeding, medicines, &c. But, although there may be ſome truth in all this, yet, it cannot be denied, that, in our days, criſes are commonly obſerved in diſeaſes; and, that a knowledge of them, is of great uſe to the phyſician.

Criſes do not happen in all diſeaſes. Sydenham obſerved this, and ſays, "There are ſome kinds of fe-
"vers which nature removes by ways peculiar to her-
"ſelf, without any viſible evacuation, namely, by re-
"turning the morbific matter into the maſs of blood,

"and

" and aſſimilating whatever was foreign to it." Galen alſo obſerved, that death frequently follows in diſeaſes without any criſis, and gives the ſign by which this may be fore-known. " The firſt, and greateſt " ſign is weakneſs of the faculties of the body; the " ſecond, when there is no ſign of the leaſt concoc- " tion, the diſeaſe itſelf being great, malignant, run- " ning with celerity. In this ſtate death will follow " without any criſis."

Many phyſicians, alſo, perceiving that fevers returned, when the patient ſeemed well, and even after a manifeſt criſis; and, finding others, whom they have pronounced to be well, ſtruggle a long time with the diſeaſe, began to deſpiſe and neglect the obſervation of criſes. But the ancients have warned us of theſe diſappointments, and given the ſigns by which relapſes, after criſes, may be predicted. For, it frequently happens, in very violent fevers, that nature cannot conquer the diſeaſe at one conflict; but, after a deceitful truce, breaks out again, and cannot be intirely ſubdued, but by raiſing new commotions, that the morbific matter, which ſtill remains, may be expelled, and that often, not by one, but many outlets. Hippocrates ſupplies us with a remarkable caſe, which proves all this. Epidem. lib. 3, Ægrot. 3.

It is certain, that the obſervation of criſes is of great uſe; for by them we learn how, and by what ways, nature cures diſeaſes; and we are admoniſhed not to diſturb her in that work by the impertinent endeavours of art. For when we have learnt, by careful obſervation, what courſe nature inclines to take, and by what paſſages ſhe evacuates the morbid humours, we may forward thoſe intentions by ſuitable remedies. We may alſo learn from the doctrine of criſes, and critical days, at what time of the diſeaſe thoſe alterations are to be expected. But of this we ſhall treat more fully when we come to explain the old doctrine of critical days at Aph. 741.

It is, moreover, to be obſerved, that all the endeavours

deavours of nature to concoct, prepare, and critically discharge the morbid matter, may be disturbed, either by the fault of the patient, physician, attendant, or some unavoidable accident, which no human prudence could either foresee or avert; as by sudden anger, and other passions of the mind. Hippocrates gives a remarkable instance of this: for, in describing the epidemical constitution which then prevailed, he says, those were chiefly saved who had a large bleeding at the nose, or a flux of urine, with a laudible sediment; yet, the daughter of Philo, who had all these died, because she supped unseasonably on the seventh day. Sydenham often complains, that the patient's friends, or attendants, disturbed every thing, and that many perished thereby, or, at least, were, with great difficulty, preserved. But it seems very probable, that those physicians who were, by their impatience, always disturbing the salutary efforts of nature, did it through ignorance. Galen condemns the physicians of his time, who did not believe they had proceeded according to art, if they had not bled, clystered, cupped, in all fevers, by which the motions of nature, at their stated periods, were always prevented.

But there have been physicians, in the following ages, who have gloried in doing this with design. Helmont exclaims against a crisis, and against physicians who expected one in diseases; and boasted that it was in his power to suppress diseases at their first rise.

The ancient physicians have left us many excellent rules whereby we may discover the method, ways, and times, in which nature cures diseases. If the moderns had used the diligence in the observation of diseases, which the ancients did, we should have improved and enlarged them long before; for we are certain, that physic arose from observation, and will ever be most promoted by it. The worthy Sydenham is a proof of this, who, without the help of theory, by diligent observation only, has collected all the phænomena of the diseases yet known to us, and

given a moſt exact hiſtory of them. Dr. Solano, a Spaniſh phyſician, though little acquainted with phyſical learning, gives us the ſtrongeſt proof how much the medical art may be improved by obſervation only; for he has, by a careful obſervation of the pulſe, predicted various critical evacuations by urine, ſweating, bleeding at the noſe, &c. and even to determine the hour when theſe criſes were to be expected. It is, likewiſe, very probable, that a number of uſeful ſigns may be diſcovered from the reſpiration, tongue, &c. if their different appearances were carefully obſerved in the courſe of diſeaſes.

A change of the healthy humours into, &c.] While the ſound humours, in a healthy man, circulate freely through the veſſels, all the functions of the body are duly performed; but, when their motion is increaſed by a fever, their healthy qualities are, ſooner or later, changed, according to the nature, violence, and duration of the fever. In the variolous fever, a great part of the humours are changed into matter, and, in the worſt ſpecies of this diſeaſe, into a gangrenous ichor; and all this from an increaſed motion of the blood. See Aph. 100.

An alteration of the ſound parts, &c.] In many diſeaſes attended with a fever, we ſee the bodies of people ſo altered, that they afterwards ſuſtain the ſame cauſes, though frequently applied, without any detriment. Thus one, who has had the ſmall pox, is not affected with it again, though he afterwards aſſociates with thoſe who are ill of the diſeaſe. Sydenham alſo remarks, "That thoſe who are ſeized with a quartan, if "they were never afflicted with it before, the diſeaſe "will not fatigue him long the ſecond time; but will "go off ſpontaneouſly after a few fits."

An expreſſion of the thinneſt fluids, &c.] See the comment to Aph. 100.

Thirſt, heat, and the other ſymptoms mentioned in the text, will be explained hereafter under their particular titles.

APH. DLXXXVIII.

THE ſooner the lentor is removed, and the irritation allayed (574,) ſo much the ſlighter, ſhorter, and ſafer will the fever be; and the reverſe. The fever will alſo vary according to the different degree and concurrence of both theſe.

By *lentor*, we mean that obſtruction or obſtacle formed in the extremities of the ſmall veſſels, impeding the free courſe of the blood through them, whether it proceeds from a fault in the humours, or veſſels, or both together. If this *lentor*, by the increaſing force of the circulation in the heat of the fever, can be eaſily reſolved, and, at the ſame time, the cauſe irritating the heart be ſuch as will ſoon ceaſe of its own accord, or eaſily ſubdued by the fever itſelf, it will then be of ſhort duration, and end favourably. Thus, if a fever ariſes from too much exerciſe, and the blood does not acquire an inflammatory thickneſs, ſuch a fever will be cured, in a little time, by reſt, diluents, and a thin diet. For the irritating cauſe, in this caſe, is the venal blood, urged with too great a celerity and impetus towards the heart by the violent motions of the body; but, by reſt, this irritation ſoon goes off. But when, by too much exerciſe, the blood has acquired an inflammatory viſcidity, or, if this exiſted in the blood before, the lentor, in ſuch a fever, cannot be ſoon reſolved, but will continue longer, and be more dangerous on account of the inflammation, and other bad ſymptoms which may be thence feared. As a fever varies according to the different degree of lentor, ſo is the ſame alſo true with reſpect to the greater or leſſer ſtrength of the irritating ſtimulus.

APH. DLXXXIX.

HENCE, we learn, that a fever often is a remedy for the cure of other diſeaſes.

See the comment to Aph. 558, where this is confirmed by the teſtimony of the ancients. Nor, will this be ſurpriſing, if we conſider what has been ſaid of the effects of a fever in the preceding aphoriſm; and, that a phyſician beſt conſults the intereſt of his patient, who conſiders the fever as an inſtrument of nature, whereby ſhe changes, ſubdues, and expels the cauſes of diſeaſes.

APH. DXC.

HENCE the beginning, increaſe, height, decreaſe, criſes, changes, and cure of a fever vary both in acute, and particular fevers.

As the lentor, and irritating ſtimulus act, in various degrees in fevers, the natural progreſs, ſymptoms, and cure of the diſeaſe, may be very different; and this is more particularly obſervable, in acute diſeaſes, which run through their courſe ſwiftly, and with danger; but, in ſlow fevers, the changes are not ſo ſudden and conſiderable, nor are they limited to a definite time. In epidemical fevers, which ariſe from the ſame common cauſe, there is a greater reſemblance even in different conſtitutions; but in particular fevers, which ariſe from different cauſes in every perſon, a great variety is obſerved, as the ſeveral cauſes of theſe fevers, conſtitution of the patient, and the concurrence of different cauſes, may produce almoſt an infinite difference of changes; all which ought carefully to be obſerved through the ſeveral ſtages of the diſeaſe.

Beginning.] We have already obſerved, that a fever can only be known by the quickneſs of the pulſe; therefore the beginning of a fever will be when this quickneſs of the pulſe begins to increaſe. It is of great moment to know the time when the fever begins; but this is very rarely the caſe, as the phyſician is ſeldom called in till the diſeaſe has made ſome progreſs; ſo that he is obliged to depend upon the relation of the patient and his attendants. In-

Increaſe.] All that time of the diſeaſe, which comes betwixt the beginning and height of the diſeaſe, is called the increaſe. In this period the functions are more and more injured, the ſymptoms increaſe, and new ones ariſe.

Height.] This is the moſt dangerous ſtate, becauſe all the ſymptoms have been increaſing through the progreſs of the diſeaſe, and are now come to their ἀκμὴ, or height. During this time of the diſeaſe, the ancient phyſicians never diſturbed the body, either by diet or medicines; but carefully attended to nature, whether ſhe aimed to throw off the morbific matter by evacuations, or depoſite the ſame upon ſome particular part.

Decreaſe.] In this ſtate the general ſymptoms leſſen, and health daily increaſes; ſo that life is not generally in danger when the fever is paſt its decline. Hence Galen will have it, that if any die after this time of the diſeaſe, it is owing either to the errors of the patient, or of the phyſician. But the declenſion of fevers is uſually proportionate to their increaſe, which we have ſhewn to be various in different fevers. Theſe are the four ſtages which we meet with in all diſeaſes, if the malignity of the diſeaſe, or the weakneſs of the patient, do not occaſion death, either in the increaſe or height of the diſeaſe; or a perfect criſis happening at this time does not prevent its future declenſion.

Criſis.] Of a criſis, we have treated before in the comment to Aph. 587. But this is various in fevers, both with reſpect to time, or its being good or bad, perfect or imperfect, made at once, or repeatedly, by one or ſeveral emunctories, or elſe by tranſlations, &c.

Changes.] A fever is often changed into another diſeaſe, either of the ſame nature, or of a different kind. Thus continual fevers often turn into intermittents, and intermittents into continuals. Beſides the ſolids and fluids are ſometimes ſo altered by the

fever as to bring on a new diſeaſe inſtead of health. But theſe changes vary according to the cauſe, violence, duration, method of cure, &c.

APH. DXCI.

A Fever terminates either in death, another diſeaſe, or in health.

APH. DXCII.

IT terminates in death from a deſtruction of the ſolids by a force acting with too great violence upon them, or from ſuch a depravity of the fluids as to obſtruct the vital veſſels, or thoſe through which new fluids ought to be conveyed, in the room of thoſe which are conſumed. Hence inflammations, ſuppurations, and gangrenes in the vital viſcera, the heart, lungs, and cerebellum; or aphthous ulcers in the *primæ viæ*,, which frequently prove the cauſe of death in fevers.

From a deſtruction of the ſolids, &c.] In a ſtate of health the ſides of the veſſels ought to be ſtrong enough to ſuſtain, without breaking, the impulſe of the humours: for as they are moved through converging arteries, they muſt act with great force upon their ſides. If this force be increaſed, and the ſtrength of the veſſels the ſame, it is evident there will be danger of breaking their coheſion. The larger arteries indeed can bear a great force without a rupture, but the ſmall ſanguiferous arteries muſt be in danger of breaking by the increaſed impetus of circulation in fevers. Practical obſervations confirm this; for the acute fever which attends the worſt kind of the ſmall-

ſmall-pox, is often followed with violent hæmorrhages either from the lungs, or the kidnies.

Or from ſuch a depravity of the fluids, &c.] In a fever the moſt liquid parts of the fluids are expreſſed, and the remainder thickened; and thus the humours becoming impervious, muſt occaſion obſtructions. But if this happens in the vital viſcera, as in the lungs or cerebellum, death muſt ſoon follow.

Or thoſe through which new fluids, &c.] No new liquid can get into the blood, but by the veins which open with very numerous and ſmall mouths throughout the external or internal ſurfaces of the body, and abſorb the fluids contiguous to them. But as the fluids in the veins move from the *apex* towards the *baſis*, there is no great danger of an obſtruction here; yet a compreſſure of the adjacent parts, or a dryneſs and contraction of theſe abſorbing veſſels may prevent the fluids from getting into them. This is the caſe in ardent fevers; for the tongue, the fauces, and all the internal parts of the mouth, are dry, the voice becomes ſqueaking, the ſwallow difficult, and the whole ſkin rough and ſcaly. Hence the diluting liquors that are taken, do not get into the blood, but run through the bowels; and for this reaſon Hippocrates condemns a profuſe diarrhæa in ardent fevers.

Hence inflammations, ſuppurations, &c.] As the humours may be ſo depraved by a fever, as to obſtruct the vital veſſels, it is no wonder that an inflammation in a fever ſhould ariſe from a fever, as its cauſe; and when it is raiſed, that all the conſequences ſhould follow.

Or aphthous ulcers.] We ſhall treat hereafter of aphthæ in particular.

APH. DXCIII.

A Fever terminates in another diſeaſe, when it injures the veſſels by too violent an agitation, and diſſipating the more fluid parts, leaves the reſt of the humours too thick; or when, by too weak action, it is unable to reſolve the coagulum; or when it depoſites the critical matter in ſome obſtructed, dilated, or ruptured veſſels: hence red ſpots, puſtules, eryſipulas, meaſles, ſmall-pox, phlegmons, bubo's, parotids, abſceſſes, gangrenes, mortifications, ſcirrhi, &c.

When it injures the veſſels, &c.] We have ſhewn in the preceding aphoriſm, that the veſſels may be deſtroyed by the violent impulſe of the humours; and the ſame cauſe, in a leſs degree, may diſtract or overſtretch the ſides of the veſſels, which will leſſen the coheſion of the ſolid parts: hence a great number of diſeaſes may follow, as we obſerved in the comment to Aph. 26. For the aſſimilation of the aliments, in a great meaſure, depends upon the action of the ſolids on the fluids; and the ſecretions and excretions require a certain capacity in the veſſels: when therefore the ſolid parts are too much weakened by long continued fevers, we frequently find that they are followed by dropſies, rickets, cacochymy, &c.

And diſſipating the more fluid parts, &c.] This effect of a fever was proved in the comment to Aph. 587; and in the preceding aphoriſm it was obſerved, that when the inſpiſſated humours obſtructed the vital veſſels in the lungs or cerebellum, death muſt ſoon follow. When this obſtruction happens in the other viſcera, whoſe integrity is not abſolutely required to preſerve life, but only health, then the fever

fever terminates in another diſeaſe. Hence obſtructions in the liver, ſpleen, &c.

Or when by too weak action it is unable to reſolve, &c.] A fever is the inſtrument of nature to change or expel whatever reſiſts a free circulation. When the febrile motions are too languid, either from the patient's natural weakneſs, or from an improper treatment, then they become unable to reſolve the febrile coagulum, or morbid matter. In this caſe, the fever ceaſes, but health does not return, becauſe the matter ſtill remains in the body unreſolved, and continues to diſturb the functions. See more of this in the comment to Aph. 609.

Or when it depoſites the critical matter, &c.] When the material cauſe of a fever is changed or expelled the body by the febrile motions, health is then reſtored. But frequently this diſcharge does not happen in fevers, but the morbid matter is depoſited upon ſome part of the body, where it creates new diſeaſes. But if this critical matter is ſo thin as to flow freely through the veſſels, it will be neither accumulated nor depoſited in any part. Hence the particles of the critical matter ought to be large enough to obſtruct the veſſels; or elſe to enter the dilated orifices of the ſmaller veſſels by an error of place, without paſſing through their extremities; or it muſt, laſtly, be extravaſated by a rupture of the veſſels into ſome natural or morbid cavity. By each of theſe three ways the critical matter may be collected, and thus a fever may terminate in another diſeaſe, as will appear by the following examples. Theſe critical depoſitions which appear in the external parts are here chiefly enumerated, although the like alſo happen in the internal parts, as we learn from anatomical diſſections; but when theſe are thus affected, we know from the injured functions of the parts.

Red ſpots.] Theſe are generally of no bad conſequence, and ariſe in fevers where the morbific matter

ter is evacuated by inſenſible perſpiration or ſweat. They are eaſily cured only by diluent and cooling remedies. Hippocrates obſerved theſe ſpots about the ſeventh, eighth, and ninth day in fevers in the ſummer time, and only in women; and adds, that none died who had theſe eruptions.

Puſtles.] Theſe differ from the former, as they riſe above the ſurface of the ſkin, and are elevated into ſmall tumours.

Eryſipelas.] What this diſorder is, we have explained in the comment to Aph. 380. A fever will ſometimes ariſe in a healthy perſon, without any previous known cauſe, and will terminate in one, two, or more days; but at the ſame time, large red ſpots appear in the external ſurface of the body, which often ſpread themſelves ſuddenly into a large compaſs. I have ſeen an eryſipelas ariſe in the arm on the fifth day of a fever, which, in a little time, has ſpread up to the ſhoulders, from thence to the neck and face, and at laſt ſeize the whole head. The fever immediately abated while this eryſipelas ſpread through the arm. This fever is uſually without danger, and is cured by a thin diet, and cooling medicines; yet it ſometimes terminates in a gangrene. In theſe eryſipelatous fevers, the event of the diſeaſe depends chiefly upon the parts which the eryſipelas, raiſed by the fever, occupies; for if it ſeizes the membranes of the encephalon, and ſuddenly excites a delirium, it kills the patient.

Meaſles.] For the eruption of theſe is always preceded by a fever, and in the regular kind of meaſles always on the fourth day; but in the anomalous, ſometimes ſooner, and ſometimes later. In theſe diſorders the morbific matter is determined towards the ſurface of the body, and therefore without much danger; but when a delirium or dyſpnœa ariſes, there is reaſon to ſuſpect, that the encephalon or lungs are ſeized with the like diſorder, and then the caſe is doubtful and dangerous.

Small-

Small-pox.] What has been ſaid is moſt manifeſt in this diſorder. For the infection raiſes a fever, which often deceives the moſt ſkilful phyſician, unleſs the ſmall-pox be epidemical at that time; the general ſymptoms being ſo much like thoſe which attend all other acute continual fevers.

Phlegmons.] What a phlegmon is, and how it differs from an eryſipelas, has been ſaid before, in the comment to Aph. 370, and 380. But as an eryſipelas is determined towards the ſurface of the body by the fever, or elſe attacks the internal parts, ſo does a phlegmon, as we are aſſured by practical obſervations. I have ſeen a fever ariſe in a healthy perſon without any previous obſervable cauſe, which has terminated after twenty-four hours, leaving a violent inflammation in ſome part or other; is not ſomething of the ſame kind obſervable in acute inflammatory fevers? Certainly a pleuriſy ſeldom happens without a preceding fever, by which the inflammatory matter is depoſited on the intercoſtal muſcles. Do not acute inflammatory fevers more eſpecially differ from each other, according to the nature of the part upon which the inflammatory matter is drove by the preceding fever? This indeed ſeems very probable; for the general curative indications are the ſame in all, and the only difference ariſes from the parts affected. Thus when a phlegmon ſeizes the leg, a prudent phyſician will not diſturb this tranſlation of the matter by cooling, aſtringent, or repellant medicines; but endeavour to cure the inflammation, either by diſperſing it, or promoting a mild ſuppuration; but when the matter is depoſited upon the brain, the indication is, to derive it from thence by all the aſſiſtances of art; and if this derivation cannot be obtained, to diſperſe the inflammation by bleeding, and the moſt powerful antiphlogiſtic remedies.

Buboes and parotids.] See what has been ſaid of theſe in the comment to Aph. 416.

Abſceſſes,

Abſceſſes, gangrenes, mortifications.] As a fever may ſometimes terminate in a phlegmon, ſo may a phlegmon terminate into an abſceſs, gangrene, and mortification. But we obſerve in fevers, that a large quantity of true matter is ſometimes depoſited of a ſudden upon particular parts, from whence it has been diſcharged, although no inflammation preceded in thoſe parts, nor any ſigns appeared; which ſhewed that the matter lay before concealed in other parts, and was abſorbed by the veins, and depoſited again upon others. This I have obſerved ſeveral times, particularly in a woman, who had got over the twentieth day in a continual fever, and ſeemed to be recovering, when ſhe ſuddenly began to complain of an obtuſe pain in each arm, which, upon examination, contained a large quantity of ſome fluctuating humour under the integuments, which were not in the leaſt diſcoloured, and being laid open, matter was diſcharged, and the abſceſs ſoon healed: yet in the whole courſe of this diſeaſe I could not obſerve any marks of a topical inflammation or ſuppuration in any part of the body. I therefore believed, that the material cauſe of the fever had been, by the fever itſelf, ſo changed and concocted, as to acquire the nature of pus, though as yet it continued to flow through the veſſels with the reſt of the humours, and afterwards depoſited ready formed upon ſome part, but not generated in the parts where it was found collected. Many paſſages in the ancients favour this opinion. Hippocrates[a] tells us, "That whenever a "fever is long, and the patient like to recover, "without any pain or inflammation, or any other "manifeſt cauſe, in this caſe an abſceſs is to be ex"pected with tumour and pain about ſome joint, "and more eſpecially in the lower limbs. But ab"ſceſſes of this kind rather happen to thoſe who are "under thirty years of age, and in a ſhorter time; "and we ought always to expect an abſceſs, if the

[a] Prognoſt. lib. 1.

"patient

" patient ſurvives after lying twenty days ill of the " fever." See what has been ſaid of a gangrene and ſphacelus in the comment to Aph. 423.

Scirrhi.] Though a ſchirrhus is a ſlow collection of impervious matter in glandular parts; yet, in fevers, a like matter is often depoſited on thoſe parts, and occaſions tumours, which, unleſs treated with the moſt emollient and diſcutient remedies, often degenerate into obſtinate ſcirrhi. In lying-in women a violent fever often ariſes ſuddenly, which ſeldom continues longer than a day or two, and then a hard tumour appears in the breaſts, which frequently turns to a ſcirrhus. Sydenham has obſerved, " That there " are no hopes of curing autumnal fevers, which " have a long time tortured children, until the ab- " domen begins to ſwell and feel hard, eſpecially " about the ſpleen; for as this ſymptom increaſes, " the fever goes off."[a]

APH. DXCIV.

A Fever terminates in health, 1. When the material cauſe is, by the force of the fever itſelf ſubdued, diſſolved, rendered moveable, and expelled in the form of inſenſible perſpiration, and at the ſame time allays the impetus of the fever, by reſtoring an even circulation of the fluids. This is a method of reſolution very much like that of a particular part deſcribed in aph. 386. Or, 2. When the matter of the diſeaſe is ſubdued, reſolved, and rendered pervious by the force of the fever, but ſtill retains ſome quality which hinders an equal circulation, ſtimulates the veſſels, and is expelled by ſome ſenſible evacuation, ſuch as ſweat, ſpitting, vo-

[a] Sydenh. Sect. 1. Cap. 5.

mitting,

miting, diarrhæa, and urine, after the concoction and height of the fever, the criſis being uſually completed within fourteen days.

1. Every thing that degenerates from the laws of health, whether it exiſted before the fever, or was produced by the fever itſelf, is uſually called the *material cauſe* of the fever. When this material cauſe is ſubdued and rendered moveable by the fever itſelf, ſo as to paſs through the ſmalleſt exhaling veſſels, it may then be expelled the body under the form of inſenſible perſpiration. But it is apparent that when the febrile matter is ſo attenuated as to paſs through the exhaling arteries, it can neither obſtruct the other veſſels, nor diſturb the circulation; yet there may ſtill remain an irritating ſtimulus capable of raiſing a fever, as was obſerved before in the comment to Aph. 586. For this reaſon it is added in the text, if at the ſame time, it *allays the impetus of the fever*, whether this be effected by the expulſion of that, which by its ſtimulus produced the fever, or by the ſame matter being rendered inactive by the fever itſelf, ſo as to cauſe no manner of irritation.

As inſenſible perſpiration is carried on every moment in a ſtate of health, without giving any uneaſineſs, this would be the moſt deſirable way of terminating a fever. But this way of curing a fever is very much like that of curing an inflammation, by reſolution; of which we treated before, in Aph. 386. But every inflammation cannot be cured by reſolution; but only ſuch in which the humours are mild, their motion ſedate, and the obſtruction ſmall; all which is likewiſe true in the cure of fevers: for if the fever has diſſipated the thinneſt humous, and inſpiſſated the reſt, or has changed them into a morbid diſpoſition, it will be in vain to expect a mild termination of a fever in this manner. The ancient phyſicians have therefore very prudenly obſerved, that only

only ſlight diſeaſes go off by reſolution, and the more violent come to a criſis, that is, are removed by ſome ſenſible evacuation.

Hence appears the abſurdity of curing all fevers by diaphoretics only, without conſidering whether nature tends that way or not, and without endeavouring to reſolve the febrile matter by ſuch attenuants as do not increaſe the febrile motions.

2. The other way by which a fever terminates in health is, when the matter of the diſeaſe is by the force of the fever ſubdued, reſolved, and made pervious, ſo as to circulate with the reſt of the humours, but not as yet reduced to ſo great a tenuity, as to paſs off by inſenſible perſpiration, and at the ſame time is poſſeſſed of ſuch qualities as hinder an equal circulation, and cannot be aſſimulated into healthy humours; but, like a foreign ſtimulus, diſturbs the whole body, and ought to be expelled by ſome ſenſible evacuation, ſuch as ſweat, &c.

Sweat.] Every ſweat is not of ſervice in fevers, but that only which carries off the matter of the diſeaſe. Hippocrates has enumerated the ſigns by which a critical ſweat may be known. "Thoſe are "beſt which happen on critical days, and intirely re- "move the fever. Thoſe are alſo good which come "from the whole body, and enable the patient to "ſuſtain the diſeaſe; but ſuch as do neither of theſe "are not uſeful." And in his prognoſtics he obſerves, "That if ſweats begin on the third day, or "the fifth, ſeventh, ninth, eleventh, fourteenth, "ſeventeenth, twenty-firſt, thirty-firſt, and thirty- "fourth, ſuch ſweats terminate the diſeaſe; but "thoſe which do not appear on theſe days, denote "danger, the continuance of the diſeaſe, or re- "lapſes." But ſee Aph. 741. He alſo condemns cold ſweats, and thoſe which only riſe about the head, face, and neck.

It would be a great happineſs to know thoſe ſigns which precede a critical ſweat. *Jacotius* ſays, "That

"a

" a ſuppreſſion of the urinal and inteſtinal diſcharges,
" without the ſigns of an hæmorrhage and vomit-
" ing, ſhew that a ſweat will follow, but more
" eſpecially when the pulſe is ſoft and knotty, or,
" wave-like, attended with a delirium when the
" fever increaſes, with a heat and redneſs of the
" external parts, and a hot vapour which was not
" obſerved before." But this only ſhews, that the morbific matter is reſolved, and put into motion; nor do theſe ſigns denote by what emunctory the matter is to be diſcharged. This ſoft, *undoſe*, or wave-like pulſe is obſerved by Galen as the ſign of a future critical ſweat, eſpecially if it is alſo high and vehement: but this undoſe pulſe is more particularly deſcribed in his treatiſe on pulſes, where he ſays, " The
" vermicular pulſe is when the artery gives the ſenſe,
" as it were, of a creeping worm riſing up in the man-
" ner of waves, and when the whole artery is not
" diſtended at one and the ſame time. If, there-
" fore, this is accompanied with a ſmallneſs of the
" dilatation, the pulſe is called vermicular, but, if
" with a largeneſs, it is called ſimply *(undoſus)* a
" wave-like pulſe." This ſeems to be that pulſe which Dr. Solano calls *inciduus*, or increaſing, namely, when two, three, or four pulſes ſucceſſively increaſe one above another, ſo that the ſecond is ſtronger than the firſt, the third than the ſecond, &c. If this pulſe is, at the ſame time, ſoft, he makes it a certain ſign that a critical ſweat is at hand; and ſays, that only once he obſerved a hardneſs in this pulſe, then there was a critical jaundice inſtead of a ſweat.

Spitting.] A profuſe ſalivation in the ſmall-pox, often ſaves the patient, and a copious ſpitting in fevers, attended with aphthæ, is frequently of ſervice; but, in other diſeaſes, a critical diſcharge this way ſeldom happens.

Vomiting, diarrhæa.] Theſe evacuations may carry off very different humours. It is, therefore, no wonder if the morbid matter diſcharges itſelf by theſe

theſe ways, eſpecially as corrupted bile is ſo frequently either the cauſe, or the effect, of a fever, and may be commodiouſly diſcharged by theſe ways. But, as we obſerved of ſweats, it is not every vomiting, or diarrhæa, that is critical and ſalutary, but thoſe only which carry off the febrile matter, either wholly or in part. For this reaſon, Hippocrates ſays, "That "in ſpontaneous purgings and vomitings, if ſuch "humours are evacuated as ought to be purged off, "they are both beneficial, and eaſily bore by the pa-"tient, if, otherwiſe, the reverſe." But there is great reaſon to hope that a vomiting or diarrhæa, happening after concoction, or the height of the diſeaſe, will be uſeful; for thoſe which happen in the increaſe of the diſeaſe are rather ſymptomatical, and often do more hurt than good.

It is of great uſe to phyſicians to know thoſe ſigns which ſhew that nature endeavours theſe evacuations. Hippocrates remarks, "That whoever complains in "a fever which is not fatal, of a pain in the head, or "the appearance of a ſort of darkneſs before the "eyes, attended with great pain at the mouth of the "ſtomach, bilious vomitings will follow. But, if "there is alſo a rigor, and a coldneſs in the lower "parts of the hypochondria, the vomiting will then "happen ſooner: and, if at that time, the patient "eats or drinks any thing, it will be vomitted in-"ſtantly." But this takes place in a *fever not fatal*, becauſe a pain in the head, and a dark vertigo, is one of the worſt ſigns in a phrenſy, and do not then preſage a vomiting. And, in his Coan prognoſtics, he ſays, "That anxieties, a pain in the mouth of "the ſtomach, and ſpitting, denote a vomiting in "fevers; but when belchings, flatulencies, a rum-"bling of the bowels, and a diſtenſion of the belly "attend, a diarrhæa follows." In another place, to theſe ſigns he adds, tremblings, wearineſs, and pains in the loins as ſigns which denote a future evacua-

tion by ſtool. Solano obſerved, that an intermitting pulſe was a certain ſign of a critical diarrhæa.

Urine.] The urine naturally diſcharges all acrimonious particles from our fluids. We have already obſerved in the comment to Aph. 593, that the material cauſe of a diſeaſe being ſubdued, and rendered pervious, is diſcharged by urine, or, if that is not done, an abſceſs is formed in different parts of the body. But whether or no the morbific matter is often diſcharged by the urinary paſſages only, after critical commotions in acute diſeaſes, may ſtill be doubted. When Hippocrates enumerates the evacuations by which the epidemical diſeaſes, in his time, were carried off, he, likewiſe, reckons up a bleeding at the noſe, a plentiful diſcharge of urine, with a copious and laudable ſentiment, and a bilious diarrhæa or dyſentery; but, at the ſame time, he obſerves, that many were freed from the diſeaſe, not by one evacuation only, but by a concurrence of all at the ſame time. Solano ſays, that he never obſerved a criſis by urine only, without ſomething, at leaſt, of a diarrhæa; and obſerves, that, if the intermitting pulſe, which denotes a critical diarrhæa, be attended with a ſoftneſs, that we are to expect a critical evacuation by urine, together with a diarrhæa. But the ancient phyſicians ſought more frequently for the ſigns of concoction and crudity in the urine, than to have expected a critical expulſion of the morbific matter therein. Thus, Hippocrates ſays, "That "the beſt urine is that which has a white, light, and "uniform ſediment through the whole time of the "diſeaſe, till it comes to a criſis, for it denotes ſafe-"ty, and that the diſeaſe will be of ſhort duration."

After the concoction and height of the diſeaſe.] See Aph. 587.

The criſis being uſually completed in fourteen days.] *Uſually* is juſtly added in the text; for it cannot be abſolutely ſaid, that all fevers terminate by a criſis within that ſpace of time, as we learn from

practice, that they run out to a much greater length, and yet are cured by critical evacuations.

APH. DXCV.

FINALLY, if the morbific matter, ſubdued, reſolved, and rendered pervious by the force of the fever, is again aſſimilated with the healthy humours, it terminates without a criſis, or any other diſeaſe.

This termination of a fever is not to be expected unleſs the matter of it is but little different from the healthy humours; or, the fever ſo inconſiderable, or, of ſo ſhort a duration as not greatly to change them. This, therefore, takes place only in the ſlighteſt fevers, and when the febrile matter is ſo attenuated as to paſs off by inſenſible perſpiration. But, when the fever is intenſe, or of long duration, there is no foundation to expect that it will thus terminate. Hence, the ancient phyſicians have obſerved, that a return of the fever is to be expected, if it goes off ſuddenly, without any ſenſible evacuation, or without an abſceſs upon ſome particular part. See the comment to Aph. 587.

APH. DXCVI.

THE genius, danger, and duration of an acute fever, being carefully obſerved from the beginning to its height, will enable the phyſician to prognoſticate in what manner it will decline, change, and terminate.

It is of great importance to know the events of a fever. But this is to be acquired only by obſervation. In every fever there is ſome apparent injury in

the functions, and the more they are hurt, the worſe the diſeaſe. Thus, in the beginning of a fever, if the ſtrength is aboliſhed, the appetite deſtroyed, and the urine, inteſtinal fæces, &c. degenerate much from their natural ſtate, there is juſt reaſon to fear a fatal event. And Hippocrates has obſerved in his Prognoſtics, "That thoſe patients are to recover who breath "eaſily, are without pain, ſleep in the night, and "have other ſigns of ſecurity. But thoſe who pe-"riſh, breath with difficulty, are delirious, watch-"ful, and have other bad ſigns."

But when the genius, or the nature of the fever is known,, all theſe particulars will appear in a clearer light; for, as Sydenham obſerves, the wiſeſt phyſicians can neither form a ſure prognoſis, nor hit upon a right method of cure, till he has learnt the genius of the fever by a careful obſervation of the circumſtances of the patient, and of the ways whereby nature endeavours to cure the diſeaſes.

Duration.] The duration of a fever often determines the manner in which it may end. For, if the fever continues a long time, it ſhews that the febrile matter is ſtubborn, and that it cannot be cured by a mild reſolution, and even not likely to be removed by critical evacuations; but that it will go off gradually, after frequent relapſes, and imperfect criſes, or terminate in ſome other diſeaſe. On the contrary, fevers that are mild, and of ſhort duration, may go off by reſolution, or by inſenſible perſpiration. But if the fever is violent, nature, overcome by the diſeaſe, will ſink, and the patient die; and, if nature conquers the diſeaſe, critical evacuations may be expected.

APH. DXCVII.

THEREFORE, from all the circumcumſtances enumerated in Aph. 558 to

597, the general rules of diagnoſtics and prognoſtics in fevers may be eaſily deduced.

Of the general CURE of FEVERS.

APH. DXCVIII.

THE general cure of fevers is beſt obtained, 1. By ſupporting life, and the vital powers; 2. By correcting and expelling the acrid, irritating matter; 3. By diſſolving and expelling the febrile lentor; and, 4. By mitigating the ſymptoms.

Each of theſe four general intentions, in the cure of fevers, will be hereafter conſidered.

APH. DXCIX.

THE life, and vital powers, are beſt ſupported by thin aliments, and drinks of eaſy digeſtion, that reſiſt putrefaction, are proper to allay thirſt, excite an appetite, and oppoſe the known cauſe of the fever.

Some of the ancient phyſicians were of opinion, that no aliment ought to be given in the beginning of fevers; but both theory and practice teach, that food and drinks are to be given to ſupport life, and the powers of the body. The moſt proper are

Thin aliments and drinks.] All our food muſt be changed into a fluid before it can nouriſh; for the chyle is fluid before it mixes with the blood: and the more fluid our aliments are, the more eaſily will they be converted into good chyle.

Of eaſy digeſtion.] The difficulty of digeſtion depends upon the ſubſtance to be digeſted, or upon the quantity of it, or elſe upon ſome property in it, which hinders it from being eaſily changed and aſſimilated into our own nature. But, as in fevers the functions of the chylopoietic organs are often injured, the reaſon is evident why food and drink of eaſy digeſtion are here neceſſary. Every thing, therefore, that was recommended in Aph. 28, N°. 1, will be proper, milk, broths, panadoes made of well fermented bread, &c. more eſpecially if thoſe are ſelected which are known to be contrary to the cauſe of the diſeaſe.

Reſiſt putrefaction.] It was obſerved in the comment to Aph. 100, that the ſalts and oils of the blood become more volatile and acrid by an increaſe of the circulation, or, which is the ſame, incline to putrefaction. Therefore, the diet of febrile patients ought to be ſuch as is contrary to putrefaction. Hippocrates uſed only a drink of barley, and the juice or cream of it. To theſe he added oxymel, honey, and the like, all which naturally turn ſour, and, conſequently, are oppoſite to putrefaction. For this reaſon Sydenham forbid the uſe of fleſh meats, and even of their broths in acute diſeaſes, and allowed only panada, preparations of barley, roaſted apples, and the like.

Proper to allay thirſt.] Such are all watery, ſubacid, and demulcent drinks.

Excite an appetite.] For in fevers the appetite is often either intirely loſt, or very weak; and the digeſtion of the aliments is, cæteris paribus, in proportion to the appetite. But the patient naturally deſires ſuch aliments and drinks as have been before recommended. For, if roaſted meat be offered to one in a fever, it will be adhorred; but if ſkimmed milk, barley water, with lemon juice, ripe garden fruits, or ſuch like be offered, they will be eagerly taken. Hence the patient's appetite will ſometimes in-

inform the phyſician what is moſt proper in this caſe. For this reaſon Hippocrates ſays, "That whatever "kind of food or drink is deſired by the ſick, it "ſhould be allowed, if no hurt will enſue." Thoſe phyſicians are, therefore, to be condemned who think it a crime to give way in the leaſt to the cravings of the patient, which experience ſhews to be ſometimes ſalutary.

Oppoſe the known cauſe of the diſeaſe.] For the cauſes of fevers are various, and from them is derived the moſt certain and particular indication for the diet of feveriſh patients. This will appear more evident by example. Thus, in the fevers of young children, ariſing from an acid acrimony, jellies of hartſhorn, ivory, and the like, are beneficial, becauſe they correct the acid. But when a fever is kindled by food, degenerating into a putrid, alcaline acrimony, the jellies, before mentioned, would be very pernicious, as they naturally tend to an alcaline putrefaction; in this caſe, the diet ſhould be prepared from barley, oats, and the like aceſcent food. When the blood ſtagnates in the capillary arteries in acute, inflammatory diſeaſes, only ſuch aliment as is of the thinneſt, and moſt ſolvent nature, is proper; but when the blood is too much diſſolved, the diet ſhould conſiſt of things which incraſate and obtund.

APH. DC.

ALIMENT is to be given when the fever is off, or, at leaſt, when the violence of it is abated.

Our aliments, before they can nouriſh and repair the ſtrength, muſt be converted into chyle; but to make this change requires all the actions of the chylopoietic organs to be ſound and intire; yet, if ſome of theſe actions are deficient, we may hope for a con-

coction of light food. The beſt time, therefore, for giving food is when the fever is off. In continual fevers the difficulty is greater; for the vital indication calls for food to ſupport the patient's ſtrength, though the fever being continually preſent, does not allow a convenient time to adminiſter it. But in continual remitting fevers, the beſt times of giving food will be in the remiſſions, becauſe then the force of the fever being leſſened, it will not ſo much diſturb the body.

APH. DCI.

AND they ought to be given in a ſmall quantity at a time, and often repeated, that the digeſtive powers may not be oppreſſed, nor the aliments changed.

From what has been ſaid, it is evident, that feveriſh patients do not regard their own intereſt when they take food only once or twice a day, when it ought to be taken frequently, and in ſmall quantities. Even in the moſt acute diſeaſes, it is beſt to give ſome nouriſhment every hour to ſupport life and the vital powers.

APH. DCII.

THE quantity and quality of the food is determined, 1. From a fore-knowledge of the duration of the fever, whether 1, 4, 7, 9, 11, 14, 21, 30, 40, or 60 days; for ſo much ought to be given as will ſuffice to ſupport the patient through the coction and criſis. The ſhorter the diſeaſe, the leſs and the weaker the aliments ſhould be, and e contra. 2. From the age of the patient; for the younger and the older

older people are, with the greater difficulty they bear hunger. 3. The ſtate and violence of the fever, if known, require a different diet both in quantity and quality: in the height of the fever, it ought to be very thin, and little in quantity; but in the increaſe and decline, more copious; and the ſtronger, the more diſtant the fever is from its height. 4. From the place in which the patient lives; for thoſe who live near the equator, eaſily bear a thin and ſpare diet; but thoſe near the poles, with more difficulty. 5. From the ſeaſon of the year; for the ſummer requires a thin and light diet, the winter a ſtronger. 6. From the cuſtom and natural conſtitution of the patient; for one who in health is uſed to high living, and digeſts it eaſily, will, when ſick, require more aliment; his veſſels and viſcera being accuſtomed to it before. 7. From the ſenſe of lightneſs or oppreſſion after the aliments are taken.

Hitherto we have treated in general of the quantity and quality of the food proper for patients in a fever; but when this is to be determined in particular patients, we are led from theſe general rules to particular reſtrictions; all which we ſhall examine in their proper order under the preſent aphoriſm.

1. The quantity and quality of food proper for febrile patients would be beſt known from a foreknowledge of the duration of the diſeaſe; but as continual fevers (of which we here treat) are extended to various lengths, it will always be difficult to pre-determine the time of their duration, becauſe there are at firſt almoſt the ſame ſymptoms in ſuch as ſoon admit of a cure, as in thoſe which continue for ſeveral Weeks. Nor do I believe that any one, however

ever well verſed in practice, can tell on the firſt day of the fever, whether it will terminate in fourteen or twenty days, unleſs he ſhould know this from the genius of the diſeaſe then reigning epidemical. Nor can any great error ariſe from this uncertainty; for we can eaſily enough diſtinguiſh fevers of the worſt kind, and in thoſe of the milder kind, a ſmall exceſs in diet can do no injury, though the fever ſhould terminate ſooner than expected; eſpecially if the aliments be endowed with thoſe qualities enumerated in Aph. 599, and given in ſmall quantities, and frequently repeated. Add to this an obſervation of Hippocrates, "One may do more hurt by a diet too "thin and ſpare, than by one that is a little more "full. For which reaſon a very thin and exact diet "is generally leſs ſafe than that which is a little "fuller."

From what has been ſaid, it will not be very difficult to adjuſt the quantity and ſtrength of the food, but an example will ſet this in a clearer light. If I ſee the violence of a fever ſuddenly increaſe, without any bad ſymptoms; ſuch as a difficult reſpiration, delirium, &c. I foreſee that an ephemera or intermittent will happen; and therefore I ſhall pay little regard to diet, as the fever will go off in a ſhort time. But if a ſudden increaſe of the fever is attended with the worſt ſymptoms, I foreſee that the diſeaſe will be fatal, unleſs relieved by all the endeavours of art; and therefore either no food at all ought to be given, or only ſuch as is very thin, and in ſmall quanities; ſuch as a decoction of oats or barley, with citron juice, and the like.

2. The age of the patient ought likewiſe to be conſidered; for the nearer animals are to their origin, the more food they require. For this reaſon children are leaſt able to bear faſting. Nor will this ſeem wonderful to one who conſiders in how ſhort a time they grow up from the leaſt ſize to ſo great a bulk. Young perſons, in fevers, have all their veſ-

ſels

ſels lengthened by the increaſed force of the circulation; hence that ſudden increaſe of ſtature after recovering from acute diſeaſes; and therefore they require a proportionable quantity of liquids, that by filling the veſſels the circulation may be equable, and ſupply ſuch elements to the elongated veſſels as may preſerve a due coheſion of the parts.

Hippocrates tells us, that old people bear abſtinence eaſily, and this is true, while they are in health; becauſe they are nouriſhed neither for increaſe nor ſtrength, but only to ſupport their exiſtence: beſides, in old people the cavities of a great number of veſſels are either entirely cloſed up, or very much leſſened, whence a leſs quantity of fluids flows through them; and the veſſels being now more rigid, yield leſs to the impulſe of the fluids; and as many of the fluids are expelled the body in fevers, a drineſs will enſue; therefore the diſorders of old age will be increaſed by a fever, without a ſoft and moiſtening diet, given often, and in ſmall quantities. Add to this, that abſtinence in great old age often gives riſe to fatal ſyncopes; for the quantity of the fluids being leſſened, the rigid veſſels do not contract themſelves ſo frequenly, by which their action upon the contained fluids will be leſſened; and thus one of the cauſes of the circulation will ceaſe; whence a ſtagnation and death. And thus it is evident why abſtinence is ſo hurtful to old people in fevers.

3. From what has been ſaid, at N°. 1, of this Aphoriſm, it is evident, that the ſtrength of the patient ought to be ſupported by ſuitable aliments. We come now to conſider the quantity and quality of the food proper to be given in the different ſtages or periods of a fever. It has been often obſerved before, that our aliments do not nouriſh until they are aſſimilated into our own nature by the action of the veſſels and viſcera. This aſſimilation being therefore better performed in the beginning of a fever, when the functions are leſs injured, and the humours nearer

their

their natural ſtate, more and ſtronger food ought to be given in the increaſe and decline of a fever, and leſs, and the thinneſt in the height. All this is perfectly agreeable to the doctrine of Hippocrates. But the abſtinence neceſſary for feveriſh patients does not conſiſt in prohibiting them from all food, but only from ſuch as would increaſe the diſeaſe, or cannot be eaſily concocted; for the ſtrength of the patient ought to be kept up by ſuitable aliments, and the acrimony of the humours allayed by a conſtant ſupply of ſweet chyle.

4. It is certain that a thin diet is the moſt agreeable, and the moſt proper, in the ſummer heats; and that more ſubſtantial food may be taken, and more eaſily digeſted, during the winter's cold, when the drink may be alſo leſs, but ſtronger. The inhabitants of hot countries are beſt pleaſed with a thin diet, and live healthy and contentedly on grain, garden-fruits, and water; while thoſe who live near the poles have occaſion to eat fleſh, &c. This difference in the diet of healthy people, may likewiſe require a difference in that of the diſeaſed. But Hippocrates has ſummed up all this in the following Aphoriſm: "Some allowance muſt be made for the ſeaſon of the "year, for the country, for the age, and for uſe or "cuſtom."

5. This number is ſufficiently explained in the above.

6. This rule is often neglected in the diet of febrile patients; for it is commonly believed, that thoſe who fill their body every day with the richeſt meats and drinks, can bear abſtinence as well as others. But ſuch are, of all people, the leaſt able to bear a low diet; for the body being uſed to repletion, if that is not maintained, all the powers of it immediately languiſh and ſink. This is evident in tipplers, who, in the morning, are dull, trembling, and incapable of every thing, till they are again filled with meat and drink at the accuſtomed time. When, there-

therefore, ſuch people are ſeized with fevers, if this their cuſtom is not a little indulged, medicine will be of little ſervice to them.

7. A careful obſervation of the *juvantia* and *lædentia*, is of the greateſt ſervice; and it ſeems probable, that the firſt principles of the art of healing were thence derived. If, therefore, the patient ſoon finds himſelf uneaſy or oppreſſed, after taking a quantity of food, the phyſician may then juſtly conclude, that either the quantity or quality of it ought to be leſſened. If he bears it eaſily, it may be ſafely increaſed, as the weakneſs and different ſtate of the diſeaſe may require.

We come next to treat of the cure of fevers by removing the ſtimulus, or lentor, or both, which produce the fever. We ſhall begin with ſtimulants, which are either ſuch as are applied externally, or lodged internally, whether taken into the body, or formed in it by a corruption of the healthy humours.

APH. DCIII.

EVERY irritating body adhering externally, ſuch as ſharp-pointed fragments of glaſs, metal, wood, ſtone, bone, or any ſtimulating, inflaming, corroding, bliſtering, cauſtic, putrefying, or poiſonous ſubſtances, are to be removed as ſoon as poſſible; and the parts where they lodged, and which they injured, are to be fomented with lenient, mucelaginous, ſoft, oily, anodyne, and gently aperient fomentations.

See what has been ſaid in the hiſtory of wounds, from Aph. 186, to Aph. 189. See alſo Aph. 425, and 586.

APH.

APH. DCIV.

THE acrid irritating matter lodged internally, whether it ariſes from inflammation, ſuppuration, gangrene, ſphacelus, cancer, caries, ichor, pus, or acrid and ſtagnant lymph, ought to be removed or corrected agreeable to the rules laid down in the hiſtory of theſe diſeaſes. If any epidemical, or poiſonous contagion be received into the body, ſo as to ſtimulate the vital powers, it ought to be treated agreeable to the rules laid down for epidemical diſeaſes, in Aph. 1407 to 1412.

When the acrid irritating matter is lodged internally, the cure is more difficult; yet the removal of it is abſolutely neceſſary. The principal kinds of this acrimony are here enumerated.

From inflammation.] That a fever is the inſeparable companion of inflammation, we have already ſhewn in the comment to Aph. 558. But this fever cannot be removed, unleſs the matter is reſolved; for when it turns to a ſuppuration, or a gangrene, it ſtill continues, and is even increaſed. Hence thoſe have been groſsly miſtaken, who have endeavoured to cure acute inflammatory diſeaſes by the cortex; for although the violence of the fever might be thus ſuppreſſed, yet the ſame ſtimulus remaining, will ſoon after renew the fever again. The only cure therefore for ſuch fevers is by reſolving the inflammation.

Suppuration.] If matter collected in the internal parts of the body is not evacuated, it turns acrid, and putrefying, erodes and inflames the adjacent parts, is then abſorbed by the corroded mouths of the ſmall veins, infects the blood, and kindles the very worſt kind of fevers, which can never be cured, unleſs

unleſs the purulent ſtimulus can be corrected or expelled. See Aph. 406. This is particularly the caſe of conſumptive people.

Gangrene, ſphacelus, &c.] If laudable matter, corrupted by heat and ſtagnation, and abſorbed by the veins, is capable of raiſing the worſt fever, much more may the ſame be feared from the gangrenous ichor and putrefaction of parts corrupted by a mortification. See Aph. 499.

Acrid and ſtagnant lymph.] Lymph is often accumulated in the cavities of the body, as in a dropſy; but being at firſt mild, and without acrimony, offends only by its weight and preſſure upon the adjacent parts. When it corrupts and turns acrid by long ſtagnation, ſo as to erode the containing parts, and get into the blood by the bibulous veins, a fever of the worſt kind is raiſed, attended with intenſe heat; although the dropſy is, in its own nature, a cold diſeaſe. The cure of ſuch a fever requires an expulſion of the acrid ſtagnant lymph, or a correction of the putrefaction already formed. Hence it is evident, that bitters, alcalies, ſtrong ſpices, &c. which are ſo uſeful in the beginning of a dropſy, do great miſchief when the ſtagnant lymph begins to putrefy.

Epidemical acrid, &c.] The different kinds of acrimonies before enumerated, which by their ſtimulus excite a fever, may be reduced to ſome known claſs of acrimony, for which we are provided with the moſt efficacious remedies. But fevers ariſing from an epidemical acrid, or poiſonous contagion, are much more difficult to be underſtood and cured. The only method of curing theſe fevers, is by careful obſervation to diſcover what way nature, irritated by theſe ſtimuli, takes to deſtroy their force, or expel them from the body; and then to imitate and forward, as much as poſſible, theſe ſalutary endeavours.

APH.

APH. DCV.

THE acrid irritating matter introduced into the fluids by the uſe of the ſix non-naturals, may and ought to be removed or corrected by various remedies, ſuited to the nature of the acrimony.

1. A fever ariſing from too violent exerciſe, is cured by reſt of body, and quiet of mind, by ſuch aliments and medicines as moiſten, ſoften, and dilute.

We have ſhewn in the comment to Aph. 586. N°. 3. that acute and mortal fevers may ariſe from violent exerciſe of body, and commotions of the mind.

2. Fevers ariſing from too intenſe heat of the air, are beſt cured by moderating that heat, by cooling exhalations, eſpecially of ſome plants proper for this purpoſe, by drinking water made acid with nitre, with a ſmall quantity of ſubacid wine, by ſubacid and demulcent food, a little ſalted, and by medicines of the like nature.

All theſe remedies are neceſſary to abate the heat ariſing from too hot an air. Water ſprinkled on the floor and walls, affords a pleaſing coolneſs. The branches of willow, elder flowers, roſes, and meadow-ſweet, anſwer the ſame purpoſe. Nitre, and all ſubacids, as they correct putrefaction, which too hot an air promotes, are alſo beneficial. Hence nitrous acids diluted in a great quantity of water, that they may not injure by their ſtimulus, become the moſt powerful antiſceptics, attenuate the inflammatory ſpiſſitude

ſpiſſitude of the blood, and relax the veſſels, while the water, in which they are diſſolved, will dilute the humours, and at the ſame time afford a vehicle for the urine; by which the acrid oils and ſalts of the blood are naturally diſcharged from the body.

Phyſicians often err in debarring the ſick from wine in all the ſtages of a fever, becauſe it is ſuppoſed to increaſe the heat. Strong wines certainly heat, if taken in a large quantity; but wine, diluted with a ſufficient quantity of water, recruits the languiſhing powers, and yet does no hurt by its ſtimulus; but is even more agreeably cooling than water alone. In ardent fevers, Hippocrates allowed the old wine of Thaſos, diluted with twenty-five times as much water. But tart wines are here eſpecially recommended, becauſe they reſiſt all putrefaction; for boar's fleſh, covered with Rheniſh wine, is preſerved from corrupting. Forms of drinks proper here may be ſeen in the *Materia Medica*, under this aphoriſm.

Subacid demulcent aliments, ſeaſoned with a little ſalt, make an exceeding pleaſant food in this caſe. As the ſtronger decoctions of barley, oats, rice, &c. with the addition of citron or orange juice. The jellies of tart ſummer fruits may likewiſe be added to theſe decoctions.

Watery liquors are alſo proper, as they relax, dilute, and mitigate acrimony, while at the ſame time they afford a vehicle for the ſweat and urine to diſcharge whatever is acrid and offenſive. But water alone too ſoon runs through theſe paſſages, before it has moiſtened the dry parts of the body; therefore mealy ſubſtances ſhould be added to it, which nouriſh and communicate a mild tenacity, and at the ſame time reſiſt putrefaction, as they naturally turn acceſſant. But as heat diſſipates the moſt fluid parts of the blood, and thickens the reſt, therefore ſaponaceous diſſolvents are given, as rob of elderberries, currants, mulberries, and the like. And as the acrimony of the bile is always increaſed by heat,

ſuch things are alſo neceſſary, which by a gentle ſtimulus carry off the bilious matter from the *primæ viæ*, as tamarinds, cream of tartar, ſal polychreſt, &c.

3. Fevers which ariſe from too moiſt air, are cured with large fires, made of reſinous and aromatic woods, and ſpicy exhalations.

That the air is always moiſt, even in the warmeſt ſummer's day, appears from experiments made by expoſing to the air oil of vitriol, alcaline ſalts, &c. which always increaſe their weight and diſſolve. As this moiſture in the air is either hot or cold, it will produce different effects in the human body. A cold and moiſt air will diſſolve and relax, while at the ſame time the cold contracts and ſhuts up the mouths of the exhaling veſſels, obſtructs perſpiration, and produces ſerous defluctions, whence coughs, catarrhs, ſerous peripneumonies, &c. But if the moiſture of the air is accompanied with great heat, it excites the moſt ſudden putrefaction; for the fleſh of animals expoſed a day or two in ſuch an air, will diſſolve into a moſt putrid maſs. Hence phyſicians have in all ages condemned a warm and moiſt air, as containing ſomething of a peſtilential quality.

As this moiſture of the air is ſo injurious, it ought to be corrected by fire, which dries up every thing; and particularly by a fire made with aromatic and reſinous woods, ſuch as guaiacum, maſtic, juniper, cedar, and the like, which at the ſame time diffuſe through the air an excellent antiſceptic acid, reſiſting every kind of putrefaction. If theſe woods are dear, oak-wood alone will ſuffice for this indication. Aromatic exhalations, though they do not leſſen the moiſture of the air, yet they correct a great many bad qualities in it, and are therefore juſtly directed here. It is well known that abrotanum, abſinthium, germander, rue, ſage, and the like herbs, reſtrain putrefaction

putrefaction in dead bodies upon which they are ſprinkled; and a gangrene may be prevented from ſpreading by the application of ſuch medicines, a formula of which may be ſeen in our author's *Materia Medica*, under the preſent number.

4. Fevers ariſing from a ſharp putrefying air, muſt be corrected by firing gun-powder or nitre, the ſteams of vinegar, or the ſprinkling of common ſalt upon burning coals.

All the general properties of the air have been beautifully explained by experimental philoſophers; but in this ambient fluid fluctuate a great variety of different ſubſtances. Every thing which exhales from vegetables and animals,—all that flies off from corrupted dead bodies, from foſſils, and from all other bodies, either ſpontaneouſly, or by the force of fire, all diffuſe themſelves throughout the air. Hence the air is a chaos, in which the minute particles of theſe bodies fluctuate together, and therefore may produce wonderful effects, becauſe it is every where preſent; but more eſpecially upon the human body, as it ſurrounds not only the external ſurface thereof, but alſo as it is inſpired every moment into the lungs, and conveyed into the ſtomach and inteſtines, filled with all this variety of particles, as long as life continues.

Malignity in the air is known only by its effects, and cannot eaſily be reduced to any known ſpecies of acrimony. But ſuch an air is ſaid to be ſharp or acrid, when it communicates ſtimuli to the human body, by which the humours are moſt violently moved, and moſt acute fevers kindled; and when there is at the ſame time in ſuch an air a diſpoſition to very ſudden and great putrefaction, it is then ſaid to be putrefying. Some, indeed, would have this malignity more particularly defined; but they do not ſeem to have happily ſucceeded. Thus, when malig-

nant diſeaſes have been obſerved to ariſe from the putrid exhalations of the dead bodies after a battle, ſome have inferred from thence, that putrid exhalations diſperſed through the air were always the cauſe of the like diſeaſes. But tanners, and thoſe who make glue, breathe an air filled with ſuch putrid effluvia all their life-time, and yet enjoy a good ſtate of health. Many other different hypotheſes have been framed, to account for the cauſes of malignant diſeaſes; but all no better than conjecture. Who can give a reaſon why the plague ſhould at one time invade men only, at another time only cattle, though all in general breathe the ſame air?

Firing of gun-powder.] It will be worth while to inquire what phyſic has found out to deſtroy theſe latent poiſons in the air, to render them inactive, or ſo to defend the body, that it may be either leſs, or not at all affected by them. The ancient chemiſts have pronounced fire to be the death of all things, as thereby the particular form is deſtroyed. And we are taught by the moſt ancient monuments of antiquity, that by fire alone they have endeavoured to deſtroy this latent contagion in the air. Jachen the Ægyptian, who lived long before Hippocrates, extinguiſhed a ſpreading peſtilence by fire. Vid. Suidas ſub voce. The phyſician Acron, as related by Plutarch, did the ſame. De Iſid. & Oſiride. vol. ii. pag. 383. Hippocrates, long after, uſed the ſame method; and Galen adds, that he did not order the fires to be made about the city with ſimple fuel, but that he likewiſe ordered ſweet ſmelling flowers, and fragrant ointments, that the people might breathe the air purified.

But this virus floating in the air may be carried along with it by the winds, and conveyed from one place to another. Thus Empedocles, by ſhutting up the opening betwixt the mountains through which the unhealthy ſouth winds blew into the plain country, excluded the plague. Varro did the ſame at Corſyra,

Corſyra, by which means he preſerved himſelf and family. Homer alſo tells us, that when Apollo freed the Grecian army from the plague, he ſent a violent wind,

But beſides theſe ways of correcting the air, others have attempted to do this by diffuſing certain vapours through the air, ſuch as the ſteams of vinegar, nitre, and ſulphur, which laſt has been, above all other things, recommended as the beſt corrector of all putrefaction; for the very worſt poiſons loſe their force only by melting with ſulphur; while arſenic, the ſtrongeſt of all poiſons, melted with an equal quantity of ſulphur, is ſo much weakened, that a dram of it may be given to a dog without damage. The fumes of burning ſulphur ſtop the moſt violent fermentation, and reſiſt all manner of putrefaction; but the fumes of burning ſulphur have this inconvenience, that being imprudently drawn into the lungs, it may ſuffocate and deſtroy all kinds of animals; yet when melted with nitre, it readily turns into flame, and does not yield ſuch ſuffocating fumes. For this reaſon gun-powder happily anſwers the intention; for being made of nitre, ſulphur, and charcoal, it readily takes fire, and alſo moves the air powerfully by the force of an exploſion, by which it ſpeedily diffuſes its fumes, dries and purifies the air, and at the ſame time repleniſhes the ſame with acid vapours.

5. That irritation ariſing from paſſions of the mind, are to be quieted by reaſon, by paſſions of a contrary nature, by variety of objects, and by anodynes and opiates.

See what has been ſaid of paſſions in the comment to Aph. 104.

6. That which ariſes from acid acrid food, is cured by diluting, obtunding, abſorbing, and changing it into a neutral ſalt by watery liquors, jellies of animals, oily medicines, chalk, or oyſter-ſhell powder, ſtones of animals, fat earths, fixt and volatile alcaline ſalts, either ſimple or compound. See what has been ſaid of acrids in Aph. 586, and in Aph. 60, to 69.

By diluting.] Which can only be obtained by water, and watery means. But when aliments degenerate into an acid acrimony, from a weakneſs of the ſtomach and inteſtines, diluents are then hurtful, as they weaken ſtill more. See Aph. 66.

Obtunding, abſorbing, &c.] When we treated of diſeaſes ariſing from a ſpontaneous acid, we explained the different ways of rendering an acid inactive, or change it into another nature.

7. That ariſing from acrid ſaline food is cured by diluting the acrimony with watery medicines, and by evacuating the ſame; and alſo by ſheathing thereof by viſcid and oily ſubſtances, and by correcting with lixiviums from quick lime.

Sea-ſalt and ſal-gem are in ſome places mixed with food, to give it an agreeable reliſh, and to prevent its corruption; but ſea-ſalt, when it enters the blood, is hardly changed by the powers of the body, but is diſcharged unaltered in the urine. It is indeed ſeldom that ſea-ſalt is taken in ſuch quantity as to excite a fever by its ſtimulus; but thoſe who delight in ſalted meats, or are obliged to live upon them, as ſailors, fall into the muriatic ſcurvy, which often produces the worſt fevers.

The

The chief remedy in fevers from this cauſe is, diluting with watery drinks, which nature calls for of her own accord, when one has eaten too much ſalt. When therefore a muriatic acrimony affects the humours, it will be proper to mix oily ſubſtances with diluents, as they ſheath and mitigate acrimony; but when ſea-ſalt is ſo intimately mixed with the oily and earthy parts of the blood, that it cannot be waſhed out, the beſt remedy is a lixivium of quick lime: for it is well known to the chemiſts that quick lime purifies ſalts that have been rendered foul with oils. Hence we learn the uſe of lime-water in the ſalt ſcurvy.

8. That ariſing from acrid, aromatic, and heating aliments is cured by watery diluents; by correcting with acids; by reſolving and deterging with ſaponaceous acids; by mollifying and ſheathing with mild gelatinous ſubſtances: and as the alkaleſcent acrimony belongs to this claſs, the cure of it is hence eaſily to be underſtood.

Though ſpices are very uſeful in languid and cold diſeaſes; yet in healthy people, eſpecially thoſe of a warm temperament, the moſt acute fevers often ariſe from the abuſe of them. Oil of cinamon burns the tongue, and excites a true inflammation; ſo will cloves and moſt other ſpices, though in a leſs degree. The remedy therefore for fevers ariſing from theſe cauſes will be every thing that is capable of removing or weakening their ſtimuli, which is done by

Watery diluents.] For if the very ſharp oil of cinnamon, be ground with ſugar, it may be ſo diluted with water as to render it at length inactive.

By correcting with acids.] Acids leſſen the heat ariſing from ſpices. The pods of the burning capſicum, infuſed in vinegar, become mild, and the

ſame is true almoſt of all other ſpices. Hence the juice of citrons, oranges, vinegar, and the like, given with diluents, are of the greateſt uſe.

By reſolving with ſaponaceous acids.] The acrimony in ſpices is wrapped up in a tenacious oil, which adheres very firmly to bodies. This tenacity cannot be eaſily divided without the uſe of ſaponaceous ſubſtances, eſpecially of ſuch as are acid, or inclining to it, as the expreſſed juices of ripe garden fruits. The juice of grapes drank plentifully, diſſolves all the humours, and often excites a diarrhæa, that will reduce a fat perſon to a ſtate of leanneſs in a few days, almoſt all the fat being diſſolved and diſcharged by ſtool. See Aph. 376.

Sheathing with mild gelatinous ſubſtances.] Theſe are procured either from animals or vegetables. Decoctions of barley, oats, and the like, are here proper, as they abſorb all acrimony by their mealy glue, and likewiſe ſpontaneouſly incline to acidity.

Alcaleſcent acrimony.] See what has been ſaid of the alcaline acrimony in Aph. 76, &c.

9. That ariſing from alcaleſcent food is cured by the method directed in Aph. 76, to Aph. 91. where we have treated of diſeaſes which ariſe from a ſpontaneous alcali.

10. That which ariſes from too great a quantity of aliment, conſtringing the orifices of the ſtomach, is cured by dilution, faſting, vomiting, and purging.

When too large a quantity of food is taken into the ſtomach, is does not receive that change which is neceſſary for its further elaboration in the inteſtines, but ſpontaneoſly tends either to an acid, putrid, or rancid acrimony. The cure, in this caſe, wholly conſiſts in emptying the ſtomach; or if this cannot ſafely be done, to allow ſome time for faſting, that the

the ſtomach may, by degrees, be enabled to digeſt the contained aliments, at the ſame time diluting with warm water that they may more eaſily paſs through the pylorus. But when the quantity of food diſtends the ſtomach ſo much as to contract both its orifices with a convulſive force or ſpaſm, the diſorder becomes much more dangerous; for the included air, being rarefied by the warmth of the parts, the ſtomach will be ſtill more diſtended, the adjacent viſcera compreſſed, and the veſſels diſperſed through the ſubſtance of the ſtomach itſelf, will be ſtraitened; whence an inflammation, and even a gangrene of the ſtomach and viſcera, may ariſe. In this caſe, it would be highly dangerous to unload the ſtomach by vomit; for, in the act of vomiting, the diſtended ſtomach is violently compreſſed between the abdominal muſcles and diaphragm, and if the ſuperior orifice does not, at the ſame time, relax, the ſtomach may burſt, or, the blood being violently drove towards the head in the endeavours to vomit, a fatal apoplexy may follow from a rupture in the blood veſſels of the encephalon. It is, therefore, more adviſeable to empty the veſſels by plentiful bleeding, and then to excite vomiting by irritating the fauces with a feather. Then vomits, which act quickly, will be proper, as the vitriolum album, diluted with water, which excites a vomiting almoſt as ſoon as it is ſwallowed, for here delay is dangerous.

But when the ſtomach has been a long time diſtended with too great a quantity of food, it often loſes its ſtrength, and becomes, as it were, paralytic for ſome time after. Nor are the muſcular fibres alone weakened, but the orifices are alſo relaxed, ſo that the aliments are lodged as it were in a looſe ſack, the ſtomach exerting no action upon them, and, in a very little time, by the motion of reſpiration, paſs through the pylorus into the inteſtines without any conſiderable change. In this caſe, the beſt remedy is to avoid all diſtenſion of the ſtomach, that the

the diſtracted fibres may gradually recover their former ſtrength.

11. That which ariſes from ſharp fermented, or fermenting liquors, whether acid, oleous, aromatic, diſtilled, or ſimple, is cured by the ſame remedies directed in N°. 5, 6 and, 8 of this aphoriſm. See Aph. 586, N°. 1.

When any fermented liquor, as wine, mead, ſtrong beer, or the like, is drank moderately by one not much accuſtomed to it, a great heat ariſes throughout the body, with chearfulneſs of mind; all the ſenſes become more ready,—the members more active,—the paſſions of the mind quiet and agreeable, corroding cares are forgot, and the reaſon becomes moſt correct. But when they are drank to exceſs, all the ſenſes, both internal and external, with the voluntary motions, are diſturbed and weakened, inſomuch, that neither hands, feet, tongue, nor, even the mind, can any longer perform their office. Inflammable ſpirits, made from ſuch fermented liquors, produce all theſe effects much ſooner, but then they diſappear ſooner, as they are in a little time exhaled again from the body. But worſe conſequences ariſe from drinking inflammable, than fermented liquors; for the former have the power of coagulating the blood and lymph, and of hardening the ſolids, and the more, the leſs they are diluted with water. Hence thoſe unhappy people who indulge themſelves in theſe liquors, are troubled with the moſt obſtinate obſtructions, and have all their viſcera ſcirrhous.

The cure of ſuch diſeaſes as ariſe from the abuſe of fermented liquors is various. For one method is required in the drunken fit, and another in the crapulary fever which follows. Again, a different method will be required for thoſe who ſeldom indulge themſelves, and for thoſe, as Pliny obſerves, " who

" who are formed, as it were, for the deſtruction of " wines;" the different acrimony of fermented liquor will alſo require a different cure, as it is either acid, oily, aromatic, &c.

When, therefore, a fever is kindled from too great a quantity of fermented liquors, the beſt method is to dilute with a great quantity of water, or watery diluents, of any kind taken warm, leaſt their coldneſs ſhould injure the heated body. Theſe frequently occaſion a vomiting, by which a great part of the fermented liquor is brought up, and is, therefore, ſtill more ſerviceable. After the ſtomach is cleared by vomiting, quiet ſleep is the beſt remedy, by which the fibres have reſt. Yet watchfulneſs and a fever will remain the ſame day as a puniſhment, together with a wearineſs of the whole body, pain in the head, ſickneſs in the ſtomach, and often a giddineſs. In this caſe, a gentle vomit is generally neceſſary, and afterwards ſtrong wine, in moderation, by which the languiſhing powers of the body are raiſed. Hippocrates directs the ſame, when he ſays, " That if the " head achs from a crapula, let the patient drink " three gills of wine."

But miſerable is the condition of thoſe who indulge themſelves in theſe liquors: for they are under the neceſſity of repeating them, in order to ſupport the vital and animal functions. But when one habituates himſelf to drinking, the veſſels, which are ſo often dilated, become weak, and loſe their contractile force, and hence a fatal dropſy. The cure, in this caſe, will be to loſe, by degrees, the uſe of wine, and inflammable ſpirits. In the mean time, the diet ſhould be of dry bread, well fermented, or biſcuit, the roaſted fleſh of young animals, boiled river-fiſh, and ſtrong ale for common drink, avoiding warm, watery liquors, and, at the ſame time, increaſing, by degrees, the exerciſe of body. If there are ſigns of an inflammatory tenacity, acid, ſaponaceous juices, ſuch as the rob of elder-berries, currants,

rants, oxymel, and the like, will be of ſervice. But if theſe drinkers are in years, and inclined to be dropſical, the theriaca andromachi, diateſſcron, candied ginger, and ſuch warm aromatic medicines, will be of the greateſt ſervice, as they excite an agreeable warmth in the ſtomach, and recruit the weakened powers of the body. This method hardly ever fails, unleſs the viſcera are already ſcirrhous, or the tender pulp of the encephalon and nerves almoſt deſtroyed.

12. That which ariſes from too much watching, or want of ſleep, is cured by the remedies directed in N°. 1, 2 and 5 of this aphoriſm.

Long watching conſumes the ſpirits, diſſipates the more ſubtile humours, and dries up the reſt; breeds atra bilis, fixes it in the hypocondria, and diſturbs the functions of the brain. Hence a delirium, raving, madneſs, &c. for the ſpirits, which are conſumed by watching, can be repaired by no art but by ſleep. And thoſe who break through their reſt from too much ſtudy, either fall into fevers of the worſt kind, attended with a delirium, or elſe into a moſt obſtinate madneſs. Fevers, from this cauſe, are cured by reſt and ſilence, by decoctions of mealy ſubſtances, emulſions of the ſame, and by anodynes; if theſe do not anſwer, diluent and nitrous medicines are alſo ſerviceable.

13. That ariſing from an alcaline, acid, oily, ſaponaceous, putrid acrimony, produced from a retention of excrementitious humours, is to be rendered fluid, the paſſages are to be lubricated, the emunctories opened, the expulſive powers to be ſtimulated and increaſed, and all this is to be done both by external and internal remedies.

We

We have already obſerved in the comment to Aph. 586, N°. 2, that particles retained in the body, which ought to be diſcharged, excite fevers; for as theſe cannot be aſſimilated into healthy humours, they ſpontaneouſly degenerate into different kinds of acrimony. In infants, and weak people, a long retention of the fæces produces an acrimony of the worſt kind, eſpecially if they feed upon aliments which ſpontaneouſly incline to acidity. But the other excrementitious humours rather incline to a putrid, alcaline acrimony, or to a rancid corruption of the very worſt kind, if they abound with a great many oily or fat particles; or elſe they degenerate into a ſaponaceous putrefaction, which generally happens when the ſalts of the blood, rendered acrid, are united with the oils.

Yet a retention of all the excrementitious humours is not equally pernicious. A total ſuppreſſion of urine may be bore for ſeveral days, though it is never without danger. An obſtructed perſpiration, unleſs it continues a conſiderable time, ſeldom occaſions a fever. A ſuppreſſion of the inteſtinal fæces may be longeſt of all ſupported, and often without any hurt, for ſtrong, and even healthy men, diſcharge their fæces only in three or four days; ſo that a conſtipation of the bowels is not always to be regarded, unleſs there are ſigns which ſhew that corrupted humours ſtagnate in the firſt paſſages. For this reaſon, it is not always ſafe to have recourſe to purges in fevers, whereby the body is often diſturbed, and thoſe evacuations ſuppreſſed by which nature endeavoured to cure the diſeaſe. Thus Sydenham obſerved, that, in the cure of the continual fever in London, in the 1661-62, &c. it always fared the better with thoſe whoſe bowels were conſtipated towards the decline of the fever.

When, therefore, any of the excrementitious humours by too long retention have excited a diſeaſe, they muſt be expelled. But to do this, the matter muſt

muſt be made fluxile, the paſſages lubricated, the emunctories opened, and the expelling or vital powers increaſed both by external and internal remedies. An example will make this more evident. Some lean people, of tenſe fibres, have ſuch ſtrong chylopoïetic viſcera, as to draw off all that is ſoluble from the aliments, and leave the accumulated fæces dry and hard in the large inteſtines; hence ſuch people are commonly coſtive, and frequently to a great degree. In this caſe, the beſt remedy is, firſt, to divide the hard fæces by ſaponaceous medicines and honey, by emollient decoctions, to lubricate the ſides of the inteſtines by taking oil internally, and by oily injections; or, laſtly, by fomenting the anus with warm fomentations in order to relax the parts, that they may more eaſily give way. And, when all theſe means have been tried, and not before, it will then be proper to ſtimulate the expulſive powers by a purge, ſharp clyſter, or ſuppoſitary.

APH. DCVI.

THE emunctories are opened by reſolving the impacted matter, and by relaxing the obſtructed veſſels, which is effected by warm bathing, fomenting, friction, ſhaving of the hair, and cleanſing of the ſkin. See Aph. 107 to 144.

Warm bathing, fomenting.] See the comment to Aph. 35, N°. 3. and Aph. 127, N°. 2.

Friction.] See Aph. 133. N°. 3. where we have ſhewn the efficacy of friction in the cure of obſtructions.

Shaving the hair, and cleaſing the ſkin.] The ſurface of the ſkin is ſmeared over with an oily liniment which prevents it from drying, and keeps it lax and moveable. If this liniment dries upon the ſurface

face of the ſkin, it will obſtruct the perſpiration, and often produce cutaneous diſeaſes. In the ſcalp, this liniment is more copious, and ſeems eaſily to thicken, whence that ſcaly ſcurf often abounds in the heads of the moſt healthy people. If, therefore, a free perſpiration is required through the ſkin of the head, ſhaving the head will be very ſerviceable. Sydenham obſerves, that nothing is more uſeful than ſhaving the head in fevers when the morbific matter tends to the head: for, by this means, a free circulation of the humours is procured through the external branches of the caroted arteries, and the impetus of the blood averted from the encephalon.

APH. DCVII.

THAT which ſtagnates at the extremities of the arteries from too great a quantity of blood compreſſing the veſſels, is reſtored to motion by leſſening the quantity of blood by veneſection: this is known from the ſigns of a plethora deſcribed in Aph. 106 and 107.

It was obſerved in the comment to Aph. 598, that the general cure of fevers conſiſted in four indications, namely, in ſupporting the life and powers of the body, in correcting and expelling the acrid, irritating matter, in reſolving and expelling the lentor, and, laſtly, in mitigating the ſymptoms. We have already treated of the two former indications; we come now to conſider how the lentor ought to be reſolved and expelled. It was obſerved in the comment to Aph. 598, N°. 3, that every obſtacle impeding the free circulation of the blood through the extremities of the veſſels, was compriſed under the general term of a lentor, whether it ariſes from a fault of the veſſels, or fluids, or of both together. We ſhall, therefore, in this, and the following aphoriſm,

treat

treat of the cure of a lentor ariſing from a fault of the veſſels, and in the next following aphoriſms of the cure of one from a fault of the fluids.

A lentor, from a defect in the veſſels, muſt ariſe from a narrowneſs of their cavities; but this narrowneſs of their cavities proceeds either from an increaſed contraction of the veſſels, of which we ſhall ſpeak in the next aphoriſm, or from an external compreſſure, of which we are to treat at preſent. Among the numerous cauſes which may compreſs the veſſels externally, there is hardly any but the *plethoric tumour* that can cauſe a febrile lentor; (ſee Aph. 112.) for the other cauſes there enumerated injure only particular parts. But when a plethora is alſo attended with a fever, the heat thence ariſing will rarefy the blood, and therefore all the evils that follow a compreſſion of the veſſels will be conſequently increaſed. Thus we ſometimes ſee, in ardent fevers, the whole body ſuffuſed with redneſs, while the roughneſs and dryneſs of the ſkin, tongue, fauces, and internal parts of the mouth ſhew, that the ſmaller veſſels are impervious, being compreſſed by a true thlipſis, the larger veſſels being over diſtended with red blood.

In order therefore to reſtore motion to the ſtagnant blood, the quantity of it is to be leſſened by veneſection, in proportion to the ſtrength, age, and more or leſs plenitude of the patient. Hence Celſus very juſtly obſerves, "That a violent fever, wherein "the body looks red, and the veins ſwell, requires "blood-letting." But though the only remedy in ſuch caſes is bleeding, yet it ſometimes happens in plethoric people, that the fever, which was before low, rages violently after phlebotomy. Such a caſe Sydenham tells us happened within his own practice. Sched. Monitor.

APH.

APH. DCVIII.

WHATEVER heſitates at the extremites of the capillary veſſels, from a ſpaſmodic contraction of their fibres, which by their capacities are diminiſhed, is reſolved by relaxing the fibres in the manner directed in Aph. 53 to Aph. 55, and by removing the acrimony which cauſes the contraction. See Aph. 35, 36, 54, 66, 67, 88, 102 to 105, 127, and 128. where you will be ſupplied with all the means neceſſary here.

That the fibres of the veſſels may be contracted by a ſpaſmodic force, we are taught by the moſt certain obſervations. For if one ſuddenly comes out of a ſtove into a very cold air, the cutaneous veſſels will be ſo contracted, that the perſon immediately turns pale, the red blood being unable to paſs through them. The ſame alſo happen when one is ſtruck with fear; but whether this contraction of the fibres ariſes from a ſpaſm, or from any other cauſe increaſing their force, the cure will conſiſt in relaxing the fibres, that they may more eaſily yield to the impulſe of the fluids. Whatever therefore has been directed for the cure of too rigid fibres will be here proper.

And by removing the acrimony which cauſes, &c.] As the larger parts of our bodies are contracted by the application of acrid ſubſtances, it is probable that the ſmaller are alſo contracted by the ſame means. If the fumes of burning ſulphur are drawn into the lungs, they are immediately ſo forcibly contracted, that they cannot be dilated by the utmoſt effort. If the inteſtines of a living animal are but lightly touched with ſpirit of vitriol, they will im-

mediately contract themſelves ſo cloſe, that air itſelf cannot be tranſmitted. Arſenic, and other acrid poiſons have the ſame effect, as Wepfer has demonſtrated. Cecut. Aquat. Hiſt.

When there is reaſon to ſuſpect that the cavities of the veſſels are leſſened by a ſpaſmodic contraction of their coats from acrimony, whatever can either remove or weaken that acrimony, will then be uſeful. Diluent and oily medicines are here of the utmoſt ſervice. In the iliac paſſion, linſeed oil, taken to the quantity of a pound, has ſaved many out of the jaws of death. Theſe are medicines beneficial in all acrimony; but when the particular kind of acrimony is known, then medicines which oppoſe that acrimony muſt be uſed. But of all theſe we have treated in the aphoriſms cited in the text, and in Aph. 605, from whence the proper remedies may be taken.

APH. DCIX.

WHATEVER heſitates at the extremities of the capillary veſſels from its own viſcidity and lentor, is reſolved by various remedies, the chief of which is the force of the fever itſelf ſo moderated, as to ſolve the febrile coagulum; to do this, the violence of the fever is to be ſo regulated, as, 1. That it may not produce inflammations, ſuppurations, gangrenes, or ſphacelus; that theſe are at hand, the violence of the ſymptoms ſhew, more eſpecially the heat compared with the action of the arteries. 2. That the fluids may not be diſſipated by too great motion; which is known from the dryneſs of the noſtrils, eyes, throat, and tongue, a hoarſeneſs, dry and rough ſkin, little urine, and a ſmall, quick, and unequal pulſe. 3. That we do not ſuffer the force of the fever to languiſh

too

too much before the concoction of the febrile matter, leſt it ſhould be unable to ſubdue, move, ſecern, and diſcharge the matter of the diſeaſe; this is known, if the vital actions become altogether languid, without any ſign of coction yet appearing.

We come now to treat of a lentor ariſing from a fault of the fluids. It was obſerved in the comment to Aph. 110, that there is a certain degree of coheſion required in our healthy fluids. When this coheſion is by any cauſe ſo increaſed, as not to yield to the action of the heart and arteries, it is then called a lentor, or viſcidity, which ſometimes preexiſts before the fever ariſes, and ſometimes from and during the fever. Thus we ſee ſpontaneous laſſitudes, which denote an impervioufneſs of the humours, often precede acute diſeaſes: on the contrary, a fever raiſed by the variolous contagion, communicates an inflammatory lentor in a few days to the blood of a perſon, who was before in perfect health. But whether this lentor preceded or followed the fever, it muſt be removed, in order to effect a cure. Many remedies are recommended for this purpoſe; but the beſt and moſt natural is the force of the fever itſelf, ſo regulated as to be able to diſſolve the frebrile lentor. It may ſeem ſurpriſing that the fever ſhould occaſion the coagulum or lentor, and again diſſolve it; but if we conſider what has been ſaid of the effects (ſee Aph. 587, 589.) together with the various events of fevers in Aph. 593, 594. it will appear, that both theſe effects of a fever are not contradictory, but actually take place according to the different duration and intenſity of the fever. For too violent a degree of fever expels the moſt fluid parts of the humours, and inſpiſſates the reſt, therefore a lentor enſues, or that already formed is increaſed.

This ſimple method has diſpleaſed many, who think it unworthy a phyſician to ſtand by as a ſpectator in the cure of diſeaſes; and this opinion often excited phyſicians to try other methods. Some have made it their practice to ſuppreſs indiſcriminately all fevers by repeated bleeding, or increaſe the febrile motion, already too violent, by the hotteſt medicines, with a view to carry off the febrile matter by a diaphoreſis. Others again diſturb every thing with equal audacity and ill ſucceſs, by purges, vomits, &c. But the wiſe ancients following the footſteps of nature, diſcovered that the beſt method of cure was to keep the fever under due regulation, and condemned thoſe who believed that they did not act according to art, unleſs they bled, gliſtered, &c. See Aph. 587; for ſometimes, the beſt phyſic is not to give any. Sydenham, who ſtudied nature, confeſſes that he tried, in vain, to remove a *Coma ſomnalentum* from a lentor of the blood, by repeated bleeding, bliſtering, gliſters, &c. but deſiſted from this method, and only prohibited the uſe of fleſh meats, and ſpirituous liquors of any kind, to prevent the increaſe of the fever, and left the diſorder to itſelf; which diſappeared at laſt ſafely, though ſlowly, to his great ſurpriſe. Hence he juſtly concludes, "That we ought to proceed with leſs haſte, and "commit more to nature than we do at preſent. "For it is an error, and not a learned one, to think "that nature is always to be directed by art," &c. See alſo the comment to Aph. 558.

1. It will be of great uſe to know thoſe ſigns which ſhew that the impetus of the fever is too violent, or too languid, and the remedies proper to leſſen, or raiſe it. That the fever is too high, is beſt known from the degree of heat; for great heat denotes a narrowneſs of the veſſels, a thickneſs of the humours, their violent propulſion, and a great reſiſtance about the extremities of the arteries [a]. There-

[a] Boerh. Inſtit. Med. §. 968.

fore

fore every fever attended with intenſe heat, threatens a deſtruction of the ſolids, eſpecially of thoſe which are moſt tender. But it is of great conſequence to know in what part of the body this heat is perceived; for if it ſeizes the head, there is reaſon to fear a delirium, convulſions, or phrenſy often ſuddenly fatal. Hence the ancients condemned great heat about the breaſt and præcordia, although the other parts of the body were moderately warm, and even ſometimes when the extremities were cold; for we then know that the vital viſcera, the liver, ſpleen, &c. are oppreſſed from the fever.

2. A ſmall quantity of urine, a dryneſs in thoſe parts of the body which are naturally moiſt; as the eyes, noſe, tongue, palate, and ſkin; ſhew that the fever is too low, and that the blood is drained of its moſt fluid parts, and that it will ſtop in the ſmalleſt extremities of the veſſels; whence inflammation, ſuppuration, &c. For this reaſon Hippocrates condemns a dryneſs of the eyes and teeth, with a viſcid matter growing about them, and alſo a ſhrill voice; which Hollerius affirms to be always fatal.

3. When the febrile motion is too low, we find the pulſe languid and weak, the ſtrength impaired, the urine pale, the heat ſmall, as in a healthy cold temperature. Under theſe circumſtances we know that the material cauſe of the fever is not yet ſubdued, and that the force of it is too weak to move ſeparate, and expel the ſame. See what has been ſaid of concoction, in the comment to Aph. 587.

APH. DCX.

IF therefore the impetus of the fever is too exhorbitant, it may be moderated by abſtinence, a thin diet, drinking of water, a cool air; by quieting the mind, by bleeding, cooling glyſters, and by mild, watery, glutinous

and cooling medicines, with anodynes and opiates. See Aph. 92 to 106.

By abſtinence.] The patient is not to abſtain from all food and drink, but from ſuch as, by their quantity and quality, would increaſe the blood's motion, already too violent.

A thin diet.] Such as decoctions of barley, oats, rice, bread, &c. See the comment to Aph. 599.

Drinking of water.] For the more the blood abounds with water, the cooler the body, and the weaker the powers.

A cool air.] It was the opinion of almoſt all the phyſicians of the laſt age, that fevers might be cured with ſafety and expedition by a diaphoreſis. Hence they kept the patient in a very hot air, covered, and even loaded, with bed cloaths. Sydenham oppoſed this practice, and, in ſeveral parts of his works, ſhews the pernicious conſequences of it; for the inſpired air cools the blood, heated by its quick motion through the pulmonary arteries.

By quieting the mind.] We have already obſerved, that violent paſſions of the mind cauſe fevers of the worſt kind, and increaſe the quickneſs of the circulation. See Aph. 586. N°. 3, and 99. N°. 1. In what manner all affections of the mind are to be moderated, was ſaid in the comment to Aph. 104, and 605. N°. 5.

Bleeding.] For by leſſening the quantity of the blood, we weaken the force of the circulation. See Hales's Hæmaſtatu.

Cooling glyſters.] This after bleeding is another efficacious remedy to moderate the heat and force of the fever. Sydenham affirms, that he could moderate the too great heat of the blood at pleaſure by the uſe of glyſters, and that he ſeldom repeated bleeding in continual fevers, but in thoſe of a ſanguine temperament, or in the flower of their age, or who had indulged themſelves too much in wine. In others, it was

ſuffici-

ſufficient to inject a glyſter every day, or every other day, as the force of the fever required; and this method he continued till about the tenth day, eſpecially in the common acute continual fever, which terminated in fourteen days. But in thoſe whom he durſt not bleed, he ordered glyſters to the fourteenth day. Sydenham, at the ſame time, cautions phyſicians againſt the abuſe of glyſters, leſt they ſhould too much depreſs the febrile motion, and raiſe irregular ſymptoms, and new diſturbances. Various forms of glyſters are added in the *Materia Medica*, of our author, under the preſent aphoriſm, to moſt of which nitre is added, on account of its cooling virtue.

Mild, watery, glutinous, &c.] When the fever was properly moderated by the preceding remedies. Sydenham gave no other medicines, unleſs he was forced by the importunity of the patient, or his attendants. But while theſe are acting, it will be proper to give ſuch internals as anſwer the ſame end. How uſeful the drinking of water is in this caſe, has been already obſerved; but water alone eaſily runs through the body, either by urine or ſweat, eſpecially when there is an inflammatory lentor in the blood. Therefore ſuch things will be uſeful as give a ſlight degree of tenacity to the water; as oats, barley, and the like, with the addition of honey, ſugar and nitre.

Anodyne and opiates.] If the violence of the fever does not ſubſide theſe may be ſafely uſed. But in the beginning of acute fevers they are not to be given, becauſe alone they are not ſufficient to moderate the fever, though given in a large doſe; and Sydenham has ſometimes obſerved pernicious effects from them. Yet he remarks, that a phrenſy, in an acute continual fever, has yielded to them after the twelfth day, but that if they were given ſooner they never were uſeful. See what has been ſaid of opiates, in the comments to Aph. 202, and 229. N°. 2.

APH. DCXI.

IF the febrile motion be too languid, it may be raiſed by a cordial regimen, conſiſting of the more generous ſorts of meat and drink, by a warmer air, by raiſing the paſſions of the mind, and by the uſe of acrid, volatile, aromatic, and fermented medicines, with frictions, heat, muſcular motion, warm baths, and fomentations.

Cordial regimen, &c.] Cordials are ſuch as either increaſe the quantity of good humours, or render the moving cauſes more powerful. Fleſh broths, ſeaſoned with ſpices, are here proper; but wine is preferable to all other cordials, as it raiſes the languiſhing powers, and increaſes the too ſlow motion of the fluids.

Warmer air.] It is evident, from what has been ſaid in the preceding aphoriſm, that a warm air may raiſe a fever that is too languid.

By raiſing the paſſions of the mind.] That is, by encouraging the patient with the hopes of an approaching cure; for by this the motion of the fluids is increaſed, without diſturbing the mind.

By the uſe of acrid, volatile, &c.] For theſe irritate the ſolids by their ſtimulus, and quicken the circulation of the humours. But theſe ſtimulating medicines are hardly ever wanted in the beginning; but towards the end, when the impetus of the fever declines, and then they have often very happy effects.

With frictions.] See what has been ſaid of theſe in the comment to Aph. 133. N°. 3.

Heat, muſcular motion, &c.] Concerning heat we treated a little before. Muſcular motion increaſes the circulation, but is hardly ever uſed in this ſtate.

As

As to baths and fomentations, we have in ſeveral places treated of their uſe.

APH. DCXII.

AFTER the firſt remedy (Aph. 609.) which removes the viſcidity or *lentor*, the next is to reſtore the elaſticity of the veſſels, by leſſening the quantity of the fluids, by a copious and free blood-letting from a large orifice; and afterwards, or at the ſame time, increaſing its motion by ſtimulating medicines.

Stimulating medicines.] When the veſſels are depleted by phlebotomy, ſuch medicines will be proper, as by a gentle ſtimulus increaſe the circulation, that the viſcidity of the humours may be attenuated by the repeated action of the veſſels. Nor is it a wrong ſtep in art, as ſome have raſhly believed, to weaken the patient firſt by bleeding, and then to increaſe the blood's motion by ſtimulants. Sydenham allowed the ſtronger cordials in acute diſeaſes, after a copious bleeding.

APH. DCXIII.

THIRDLY, the ſame viſcid matter is rendered fluid by diluting with watery drinks, baths, fomentations, and glyſters, and with frictions at the ſame time.

Water is almoſt the only diluent, and if it can interpoſe itſelf between the cohering particles of the blood, the coheſion will be diſſolved, and the viſcidity leſſened, or intirely removed. But water and watery remedies may be applied to the body, and mixed with our humours in all the forms mentioned in the aphoriſm.

APH.

APH. DCXIV.

AND theſe will have a much better effect, if they are drank warm, and medicated with reſolvent ſalts, as nitre, ſal prunel, &c. and with the aromatic, bitter, and lacteſcent juices of plants drank cold.

The febrile lentor is often of ſuch a nature, that water cannot reſolve the cohering particles; but runs off either by urine or ſweat. This often happens in acute inflammatory fevers, and is always a bad preſage, as it ſhews that the inflammatory lentor ſtill remains. Such remedies are therefore here required, which being mixed with the water, may, by their attenuating power, fuſe and divide the viſcid matter, and thus prepare the water, that it may interpoſe itſelf between the now ſeparated particles, and prevent their uniting again. Among the ſalts, nitre and its preparations are chiefly recommended; and among the ſoaps, the native are preferred, ſuch as honey, ſugar, the robs of ripe garden fruits, ſyrups, &c. But decoctions of the bitter lacteſcent herbs are eſpecially recommended, as they are ſaid to be cooling, though endowed with a great diſſolving power. Theſe plants are enumerated in the *Materia Medica*, under the number correſponding to that of the preſent aphoriſm. Half a pound of theſe roots beat in a mortar, boiled in two or three pints of water, and ſtrongly expreſſed, gives a decoction, which affords a moſt efficacious remedy in this caſe, being ſweetened with honey, and a dram or two of nitre added to it.

But theſe liquors ought to be drank hot; for by cold the blood concretes, and the veſſels are conſtringed, ſo that obſtructions may ariſe, or thoſe already formed may be increaſed. Beſides, the diſſolving power of water is increaſed by heat, and leſſened

by cold; but the heat in which theſe liquors ſhould be drank ought not much to exceed that of a healthy body; for if it is more than this, it may harden the blood and ſerum. See Aph. 117.

APH. DCXV.

BUT that the remedies directed in the two preceding aphoriſms may operate well, quickly, ſafely, and powerfully, phlebotomy ought firſt to be premiſed; for this facilitates their entrance into the blood, and forwards their due mixture and action.

That the efficacy of diluents is promoted by phlebotomy, is evident from what has been already ſaid; for by this the thicker parts of the blood are drawn off, the too great diſtention of the veſſels is removed; and as every thing taken internally, or applied externally, is firſt received by the veins, theſe being in ſome meaſure emptied, will more eaſily admit theſe remedies, and forward their mixture with the blood.

APH. DCXVI.

AS ſoon as the lentor is reſolved by the forementioned remedies, (609, to 615.) it may be drove through the veſſels and expelled, by a continuance, or a more plentiful uſe of them; but frequently the matter thus corrected will not want to be expelled. See Aph. 595.

When the lentor is ſo reſolved as to circulate through the veſſels, then the phyſician ought to obſerve whether the functions are intire, and whether the impetus of the fever is allayed, and whether any new

new ſymptoms ariſe, becauſe the morbific matter, though now rendered moveable, yet retains ſuch properties as make it unfit for circulation, and ought therefore to be expelled. See Aph. 594. But it is not ſafe to attempt the diſcharge of it immediately by profuſe evacuations, but to diſcover by diligent obſervation towards what parts, and by what paſſages nature inclines to evacuate the febrile matter, and then aſſiſt her by all the endeavours of art.

Sometimes indeed the lentor is ſo good conditioned, that it is aſſimilated with the healthy humours, and circulates freely with them, without injuring the functions. In this caſe there is not the leaſt neceſſity to expel the lentor. See the comment to Aph. 595.

APH. DCXVII.

THE ſymptoms ariſing from an acute fever are chiefly the following; coldneſs, trembling, anxiety, thirſt, nauſea, belchings, vomiting, weakneſs, heat, reſtleſſneſs, dryneſs of the ſkin and mouth, delirium, coma, obſtinate wakefulneſs, convulſions, ſweats, diarrhæa, and inflammatory puſtules.

We have already conſidered the three primary indications required in the general cure of fevers; it now remains for us to treat of the cure of particular febrile ſymptoms. The ſymptom of a fever is that preternatural change which happens in the body of the patient from the diſeaſe as the cauſe, yet ſo as to be diſtinguiſhable from the diſeaſe itſelf, and its proximate cauſe. It is thus denominated, becauſe, for any diſorder to be called a ſymptom of a diſeaſe, it ought to be preſent during the time of the diſeaſe from whence it proceeds, as an effect or conſequence. Thus when a quartan terminates in a dropſy, the dropſy

dropſy is not called a ſymptom of the quartan, but an effect of it, becauſe it does not coincide with the quartan itſelf, but follows it. Thus fevers terminate in other diſeaſes, yet theſe cannot be reckoned among the ſymptoms of fevers. Beſides, it is impoſſible that a new diſeaſe may ariſe at the time the fever is preſent, though it neither proceeds from the fever, nor its proximate cauſe; as when a feveriſh patient is wounded, or put into a paſſion, &c. Theſe are not called ſymptoms of a fever, but ſupervening accidents (ἐπιγενόμενα); for though they aroſe during the time of the fever, yet they did not ariſe from thence as their cauſe. We are here therefore only to treat of the ſymptoms of fevers properly ſo called, of which the principal are enumerated in this aphoriſm.

APH. DCXVIII.

ALL the above-mentioned ſymptoms ariſing from the fever as their cauſe, will ceaſe of courſe when the fever is removed; and if they can be ſupported without endangering the patient's life, they hardly require a particular method of cure.

It is evident that the ſame treatment that will cure the fever, will likewiſe conquer the ſymptoms. Thus the vomitings which attend an ephemera may be ſafely neglected; yet, in an acute continual fever, it often requires a particular treatment, as will appear hereafter.

APH. DCXIX.

BUT frequently theſe ſymptoms ariſe from the *vis vitæ*, or vital powers, endeavouring to form a criſis, and expel the critical matter; and

and when they precede, accompany, or follow the criſis, they ought not to be diſturbed.

In treating of a criſis in the comment to Aph. 587. we obſerved, that wonderful diſturbances, or new, and often violent ſymptoms, were then excited, and that even after the morbific matter was ſubdued and rendered moveable, there are often raiſed anxieties, wandering pains, ſickneſs, tremblings, ſhiverings, &c. and very often the ſame ſymptoms attend the ſalutary evacuation of this matter. Therefore, before we attempt the cure of febrile ſymptoms, we ought firſt to examine whether they ariſe from the diſeaſe increaſing, or from nature encountering the diſeaſe. For moſt of theſe ſymptoms (617) either precede, accompany, or follow a criſis, and then they ought neither to be diſturbed nor removed; but when they ariſe from an increaſe of the diſeaſe, they often require a particular treatment.

But the critical ſymptoms are diſtinguiſhed from thoſe of the diſeaſe, from their appearing after concoction, and about the proper time for a criſis; and they alſo uſually go off in a little time by a ſort of critical evacuation, or, by a tranſlation of the matter to ſome other part, and ſometimes are attended with ſigns which denote that the vital powers have overcome the diſeaſe. The morbid ſymptoms, on the contrary, happen at any time of the diſeaſe, more eſpecially at its increaſe, and are manifeſtly attended with all the ſigns of crudity; nor do they alleviate the diſeaſe. It might be demonſtrated how much the ſame ſymptoms differ in the different periods of the diſeaſe. Thus profuſe ſweats and diarrhæas are always of fatal conſequence in the beginning of acute diſeaſes, and yet they are frequently happily cured by theſe evacuations towards their declenſion. In the firſt caſe, they ought to be reſtrained,—in the laſt, not at all. In the increaſe or height of an ardent fever, a coldneſs of the extremities is generally reckoned

koned a fatal ſign; yet, in the decline, it terminates the diſeaſe. Weakneſs in the beginning of acute diſeaſes, is often removed by bleeding, and other evacuations; but, towards the end, by cordials, and cordial nouriſhment.

APH. DCXX.

BUT if theſe ſymptoms (617) come out of ſeaſon, or are too violent to be bore by the ſtrength or patience of the ſick, or are like to produce ſome greater diſorder, then each of them are to be alleviated by proper remedies, having always regard to the cauſe and ſtate of the original diſeaſe, The FEVER.

Out of ſeaſon.] That is, in the increaſe of the fever, and before the ſigns of coction appear.

Too violent to be bore, &c.] That is, when the ſymptoms ſhew that ſome principal part is affected, which, by being injured, would endanger life. Thus Sydenham freely uſed phlebotomy, glyſters, and cooling medicines in a phrenitis, by which the vital ſtrength was ſo reduced that the fever ran out to a greater length, nor did the criſis ſo happily ſucceed; but then the urgency of the ſymptom required this particular treatment. As it has been already obſerved that a fever may be raiſed by violent paſſions of the mind, it is obvious enough, that a ſedate temper muſt be of great uſe in the cure of fevers.

To produce ſome greater diſorder.] Ardent fevers are ſometimes happily ſolved by a bleeding at the noſe. A prudent phyſician never obſtructs this diſcharge, unleſs it becomes ſo profuſe as to endanger life. But if an artery, breaking in the lungs by the impetus of the fever, ſhould occaſion an hæmoptoë, a vein muſt be opened, not on account of the hæmoptoë itſelf, but becauſe there is danger of its degenerating

generating into an ulcer of the lungs if it is neglected, or leſt it ſhould afterwards prove difficult to ſuppreſs. Thus, when the morbid matter is reſolved and depoſited on the legs, we then endeavour to forward this tranſlation by cataplaſms, fomentations, &c. but, if the ſigns denote that the matter tends towards the liver, lungs, brain, &c. then we endeavour to prevent it by all the aſſiſtances of art.

But in alleviating the ſymptoms of fevers we muſt always have regard to the cauſes of the fever itſelf. For example, when the ſerum, in dropſical people, becomes putrid by ſtagnation, a fever enſues, with intolerable thirſt. In this caſe, it would be improper to allay the thirſt by watery drinks and glyſters, which are ſo beneficial in a febrile thirſt—. When a delirium ariſes from exalted bile lodged about the præcordia, phlebotomy is of no ſervice; but if the ſame is carried off by a vomit or purge, the delirium is removed, and the fever, at the ſame time, leſſened. The mania, which ſometimes attends obſtinate intermittents, is not to be cured by evacuations as all other kinds are, but by cordial, ſtrengthening remedies, and a reſtorative diet, as Sydenham very well obſerves. But how different the cure of the ſame ſymptoms may be, as they appear in the beginning, increaſe, height, or declenſion of the fever, will be ſufficiently evident from one example. In a phrenſy in an acute fever from heating medicines, Sydenham uſed bleeding and cooling glyſters, till the violence of the fever began to decline, and then he was able to ſubdue both the diſeaſe, and this ſymptom, by narcotic medicines. But narcotics, given in the beginning, increaſe, or height of the fever, turned every thing for the worſe.

It now remains for us to ſhew the method of relieving or removing theſe primary ſymptoms in fevers, beginning with the cold fit.

Of

Of the Cold Fit in Fevers.

APH. DCXXI.

COLD, in the beginning of acute fevers, denotes a leſs attrition of the fluids againſt each other, and againſt the veſſels; a leſſening of their circulatory motion, and a ſtagnation of the fluids at the extremities of the veſſels, a leſs frequent contraction of the heart, a leſs quantity of blood thrown out of its ventricles, and a leſs influx of ſpirits from the cerebellum.

APH. DCXXII.

IF this cold fit is of long duration, it occaſions polypous concretions in the larger veſſels near the heart; but, in the ſmaller, being drained of their fluid, emptineſs; hence many and great diſorders in both theſe circumſtances.

APH. DCXXIII.

HENCE it is evident what this coldneſs denotes and preſages, and why, the more the cold fit is, the more dangerous the fever; why in the beginning of a peſtilential fever, the cold is extreme, and, as the fever advances, the heat is the greateſt.

Denotes.] Namely, that the vital powers are diminiſhed, that the blood is accumulated, ſtagnates, and inclines to concrete in the vena cava, and right auricle of the heart, the moſt fluid part only being

capable of paſſing through the lungs; to which add all the conſequences enumerated in Aph. 621.

Preſages.] Suffocation and death, after the moſt dreadful anguiſh, or all the ill conſequences enumerated in Aph. 622. But if the blood, which ſtagnated in the ſmall pulmonary arteries, is afterwards reſolved, the circulation will become ſtronger, and the moſt intenſe heat will be excited.

The more ſevere the cold fit, &c.] For the greater the coldneſs, the weaker the circulation, and the weaker the circulation, the nearer the diſeaſe approaches to death.

APH. DCXXIV.

IF we attempt to remove this coldneſs by any ſtrong, ſtimulating remedies under whatever title or denomination, an incurable inflammation often follows. Hence all acrid, ſaline, aromatic, and oily medicines, bliſters, and the like, are here pernicious.

As the circulation is weakened during the cold fit, many have been of opinion that cordials, and ſtimulating medicines, were neceſſary to accelerate the motion of the humours, and increaſe the force of the heart. But, during the cold fit, the venal blood ſtagnates, and is accumulated about the right ventricle of the heart. If, therefore, the motion of the humours is increaſed by ſtimulants, before they are attenuated, the groſſer parts of the blood will be more forcibly wedged in the extremities of the pulmonary artery. Beſides, warm, ſtimulating medicines continue to act even when the febrile heat comes on, and make the patient ſtill hotter while he is already burning with the febrile heat itſelf; whence incurable inflammations may ariſe.

APH.

APH. DCXXV.

BUT it is beſt cured by drinking warm water, with a little wine, honey and nitre; by baths, vapours, fomentations, and waſhing with ſuch like liquors, and by gentle frictions.

The cure of the cold fit conſiſts in attenuating and diluting the impervious humours that they may eaſily paſs through the contracted veſſels; and when this is done, the action of the heart may be ſafely excited by ſome gentle ſtimulus. A little wine may be added, or mild ſpices, diluted in a great quantity of water; becauſe the water, in itſelf too inactive, is, by theſe means, rendered more penetrating. But theſe drinks are to be taken in ſmall quantities and often, as every quarter of an hour, leaſt the ſudden diſtenſion of the ſtomach ſhould increaſe the anxiety, or throw them up by vomit. For theſe drinks are received by the veins, and conveyed immediately to the right ventricle of the heart, where they dilute, and attenuate the ſtagnant blood, and render it capable of paſſing through the lungs. Various forms of theſe medicines are given us in our author's *Materia Medica* under the number correſponding to that of the preſent aphoriſm. At the ſame time baths, vapours, fomentations, &c. applied to the ſurface of the body are very uſeful. Frictions to the extreme parts of the body, becauſe there the cold is greateſt, are alſo beneficial.

APH. DCXXVI.

THESE medicines being directly applied, the greateſt diſorders are often immediately cured. See Aph. 622.

For all these remedies render the humours fluid, and the vessels pervious; and it often happens that the febrile cause is, by their means, expelled the body; and thus the greatest disorders are removed in their beginning.

Of SHAKING in FEVERS.

APH. DCXXVII.

A TREMOR denotes an instability, or wavering of the muscles betwixt their contraction and relaxation, the contracting and relaxing causes suddenly and involuntary succeeding each other; that the influx of the arterial and nervous fluid is present at one instant, and absent the next, and, consequently, denotes, in the beginning of the fever, a stagnation of both these fluids, and, towards the end, too great a want of them, being before exhausted.

This is all theory, and founded upon our author's account of muscular motion, and the action of the nervous fluid, as delivered in his institutes, which those who are fond of theory may consult.

APH. DCXXVIII.

IF this shaking is of long duration, it occasions impediments to the circulation, and all the bad consequences thence arising. See Boerh. Institut. Med. §. 406, &c.

APH. DCXXIX.

HENCE may be derived the diagnoſis and prognoſis of a ſhaking in fevers: and hence it is apparent why ſhaking and cold accompany each other. Why a ſevere ſhaking is ſo bad; why ſhaking accompanies violent paſſions of the mind; and why towards the approach of death.

Diagnoſis.] A ſhaking or trembling is evident to the ſenſes, and the cauſe of it may be diſcovered; namely, whether it ariſes from a plethora, or an imperviouſneſs, a reſt, or deficiency of the fluids, as after great evacuations in the end of diſeaſes. If from a plethora, we know from the ſigns enumerated in the comment to Aph. 106. If from an imperviouſneſs of the vital fluid, the actions of the lungs and encephalon are injured. If from a reſt, or ſlow motion of the humours, the pulſe is weak and ſlow, and the ſtrength almoſt exhauſted. If from a deficiency of the humours, profuſe evacuations precede, the veſſels collapſe, and great weakneſs enſues.

Prognoſis.] This teaches, that a violent and long continued ſhaking may obſtruct the circulation, and produce all the bad conſequences thence ariſing. That the cure will be eaſy, or difficult, ſpeedy, or ſlow, according to the diverſity of the cauſe; for if it ariſes from fulneſs, it is cured by bleeding, and other evacuations;—if from an imperviouſneſs of the vital fluid, the cure is more difficult and ſlow; if from a deficiency, it is cured by reſtoring the fluids which have been waſted;—if from violent commotions of the mind, which do not go off when the paſſions are quieted, the cure is difficult, and ſometimes impoſſible. Hence alſo it is apparent,

Why ſhaking and cold accompany each other.] For, in the febrile cold, the pulſe is ſmall, and often

intermitting, and the paleneſs, with the ſymptoms enumerated in Aph. 576, ſhew that the blood ſtagnates in the capillary veſſels, and that the motion of the ſpirits through the nerves is diſturbed. See Aph. 627.

Why a ſevere ſhaking is ſo bad.] Becauſe it denotes that both the arterial and nervous fluid are either deficient or impervious. Beſides, ſhakings or tremblings in the courſe of acute fevers, and other diſeaſes, unleſs they precede or accompany critical evacuations, are of the worſt import; for they denote that the morbid matter has ſeized the head, and there diſturbs the free motion of the ſpirits in the encephalon itſelf. Hence Hippocrates condemns tremors in phrenitic patients, &c.

Why——violent paſſions of the mind.] Becauſe violent paſſions of the mind diſturb the common ſenſory; no wonder then if a trembling and irregular influx of the nervous fluid ſhould thence proceed. Great joy, or intenſe anger, will produce trembling, yet it more eſpecially follows from great fear; and, therefore, fear is often repreſented by the poets under the word trembling, as in Homer lib. x. p. 188, 189. And there are inſtances of incurable tremblings only from a fright.

Why towards the approach of death.] Becauſe then the influx of the arterial and nervous fluid is preſent one moment, and abſent the next. See the comment to Aph. 627. Hence Hippocrates ſays, "That ſlight tremblings, and vomiting of green "matter, are mortal ſigns in thoſe who are dangerouſly ill."

Why from profuſe evacuations.] To preſerve a free circulation of the humours it is neceſſary for the veſſels, more eſpecially the arteries, to be full; for we are taught by phyſiology, that there are two cauſes by which the blood is moved through the veſſels, namely, the force of the heart, and the contraction of the diſtended arteries. But unleſs the arteries are

firſt

firſt diſtended, they do not contract themſelves; nor can the heart diſtend the arteries, unleſs they are full when the heart propels the blood into them. For, if the arteries are empty, or ſo little filled, that their ſides do not come into contact in every point with the ſurface of their contained fluid, it is evident, that the blood propelled from the heart may enter the arteries without dilating them, and no contraction follow. But, as the larger arteries are ſtrong, elaſtic canals, they will not collapſe though there is a deficiency of their diſtending fluid, but remain in the ſmalleſt diameter of their contraction; and, therefore, if the arteries are ſo drained of their fluids, that, in this their greateſt contraction, a due plenitude is wanting, it is impoſſible for their ſyſtole to act upon their contained fluids, and, therefore, death muſt ſoon follow. But when a profuſe evacuation has only carried off ſuch a quantity of the humours, that the arteries are ſtill a little diſtended by the blood propelled from the heart, the circulation will not ceaſe, but become languid and unequal; and, for the reaſons already mentioned, the influx of the arterial and nervous fluid into the muſcles will be wavering, and a tremor follow.

Why from drinking too much, &c.] By too much drinking the maſs of humours is increaſed, and the veſſels diſtended above their natural capacity: but too great a diſtenſion, and often repeated, produces a morbid weakneſs in the fibres. See Aph. 25, N°. 3. Hence the veſſels will act with leſs force upon the diſtending fluids, though, upon this action, the motion of the humours through the veſſels, in ſome meaſure, depends. Beſides, when the liquors drank are diſcharged by ſweat, urine, &c. the diſtended and weakened fibres do not contract themſelves with a force ſufficient to propel the fluids equally in all directions; hence all the bad conſequences of profuſe evacuations. Hence it is evident, why thoſe who drink too much warm watery liquors are ſeized with

a trembling of the limbs. But the worſt trembling is that which follows the abuſe of wine, or fermented ſpirits, for theſe diſtend the veſſels much more than watery drinks. For this reaſon great drinkers always tremble, unleſs their veins are conſtantly diſtended with wine.

APH. DCXXX.

A SHAKING is cured by reſtoring the equable flux and preſſure of the arterial fluid into the arteries, and of the nervous fluid from the brain and cerebellum into the moving fibres: this is done, in the beginning of the fever, by ſuch remedies as diſſolve the febrile lentor, and recover the ſtrength (606 to 617); but, towards the end, by ſuch as ſpeedily reſtore the loſt humours, and ſtrengthen the fibres and viſcera. See Aph. 46 to 50.

In what manner this lentor ought to be removed, and by what remedies, has been declared at large in the comment to the aphoriſms cited in the text. But a ſhaking, in the beginning of a fever, requires a different treatment from one that ariſes towards the end of it. An example will make this appear more evident. When in an acute inflammatory fever the lentor renders the circulation difficult and unequal through the veſſels of the encephalon, all the functions of the brain may be ſo diſturbed as to produce a trembling. In this caſe repeated bleeding, cooling glyſters, antephlogiſtic purges, a thin diet, &c. are the proper remedies. But if a trembling ſeizes the patient towards the end of the fever, theſe remedies would increaſe the cauſe of the trembling, namely, too great inanition, the body being before exhauſted by the diſeaſe, and the preceding evacuations. But fleſh-

broths

broths, a moderate uſe of wine, frictions, ſtrengthening remedies, and ſtimulating cordials, are here neceſſary.

Of Anxiety in Fevers.

APH. DCXXXI.

ANXIETY, or anguiſh in fevers, ariſes from an impediment to the egreſs of the blood from the heart; which, therefore, cannot poſſibly circulate through the extremities of the pulmonary arteries, and the aorta; hence a ſpaſm of the contracted veſſels, or an impoſſibility for the inflammatory matter to paſs through them. We ſee the like anguiſh ariſe from the blood being ſtopped in its courſe through the vena portarum in the liver, from the ſame cauſes; for the venal blood brought thither by the cæliac and meſenteric arteries, being incapable of returning, ſtagnates, diſtends the veſſels, and reſiſts the affluent blood from the arteries; whence all the diſorders that either do or may follow from thence. It is, therefore, evident that both theſe cauſes of anxiety, in acute diſeaſes, ought to be carefully obſerved, and ſpeedily cured.

Although we cannot clearly underſtand that change in the mind which attends anguiſh, yet we may inquire into the changes which ariſe in the body from the perception of anxiety in the mind; as this is ſufficient for the purpoſes of the phyſician, whoſe province it is to take care of the body, and not of the mind. We ſhall, therefore, carefully deſcribe the corporeal

corporeal changes which either precede or accompany the ſenſe of anguiſh, and the remedies proper to remove thoſe changes.

When the heart cannot expel the blood through the arteries, an anxiety ariſes. This appears from the moſt certain obſervations; for the laſt agonies of dying people ſeem to be nothing more than intolerable anguiſh, and thoſe who have polypous concretions in the ventricles of the heart, or large blood veſſels near the heart, ſuffer the moſt dreadful anxieties whenever the velocity of the blood is accelerated by bodily exerciſe; whereas, when they are at reſt, they find themſelves well enough, becauſe the blood moving gently, eaſily ſlips by theſe obſtacles, and is drove into the arteries. Is it not, therefore, probable, that as the ſenſe of pain threatens a diſſolution of the nervous fibres ariſing from the brain, ſo does anguiſh denote the vital viſcera, and life itſelf, to be in danger?

But as the right ventricle of the heart propels the blood through the pulmonary artery, and the left through the aorta, it is evident that the cauſe of anxiety, namely, an obſtructed egreſs of the blood from the heart, may reſide both in the pulmonary artery and in the aorta: but this obſtacle is moſt frequently obſerved in the pulmonary artery, becauſe the blood conveyed into it muſt paſs through the ſmalleſt extremities into the veins, and thence into the left ventricle; and, therefore the blood would immediately ſtop in the lungs, if theſe veſſels were not pervious. Beſides, the blood drove through the narrow extremities of the pulmonary artery, becomes paſſable through all the other veſſels of the body, as we are taught by phyſiology, unleſs it is altered in its courſe, either from a ſtraitneſs of the veſſels, an error of place, or a loſs of its moſt fluid parts, &c. Moreover, an impediment about the extremities of the aorta, hindering the left ventricle from freely diſcharging its blood, will alſo prevent the pulmonary

nary veins from emptying themſelves into it; hence the lungs will be ſtuffed up in a little time, and a great reſiſtance made at the right ventricle of the heart. For theſe reaſons it is evident, that anxiety ariſes from ſome impediment to the free egreſs of the blood from the heart, and more eſpecially about the right ventricle, and extremities of the pulmonary artery.

But we here treat of anxiety as a febrile ſymptom; hence the obſtructed courſe of the blood will ariſe, either from a ſpaſm of the contracted veſſels, or an impervioufneſs of the blood, which almoſt conſtantly proceeds from an inflammatory viſcidity therein. For although many other cauſes may impede the free egreſs of the blood from the heart, as ſcirrhous tumours, compreſſion of the veſſels, a mucous cold indiſpoſition of the blood, &c. yet theſe have no ſhare in the preſent conſideration, as we here only give the hiſtory of a fever and its ſymptoms. It is alſo evident, that the ſame effect may follow from a conſtriction of the veſſels, and an impervioufneſs of the fluids. See the chap. on obſtruction, and the comments to Aph. 382. N°. 3. and 387.

We ſee the like anguiſh ariſe from, &c.] Another cauſe of anguiſh, and a very frequent one, is an impediment to the circulation of the blood through the branches of the vena portarum. This kind of anguiſh frequently occurs in practice: for many people, who ſeem in other reſpects healthy, are ſuddenly ſeized with an intolerable anguiſh, attended with moſt troubleſome vomitings, and ſoon after the whole body appears yellow, as in a jaundice. The anguiſh then ceaſes, and the bile mixed with the blood is afterwards diſcharged by urine; the yellow colour of the ſkin vaniſhes, and recovers its healthy appearance. Some weeks after, more or leſs the ſame ſymptoms return, and in the ſame order. It appears from diſſections, that in this diſorder either the ductus communis, or the cyſtic of the bile is ſo obſtructed

obſtructed by ſmall ſtones, concreted bile, or a tumour of the adjacent parts, &c. that the bile ſeparated from the blood of the *vena portarum* cannot diſcharge itſelf by thoſe paſſages, but is accumulated, and diſtends the receptacles of the bile; hence an obſtruction of the blood in the vena portarum, from which the bile ought to be ſecreted; at laſt an anxiety enſues, until the bile is repelled by vomiting, by a ſalutary effort of nature, or by mixing with the blood, produces a jaundice.

If therefore an anxiety ariſes in acute diſeaſes, it requires the ſtricteſt attention, as it is followed with ſo many bad conſequences: for the greateſt danger attends an anguiſh ariſing from an impediment to the circulation of the blood through the pulmonary artery; leſs from one which ariſes from a ſtoppage of the blood through the *vena portarum*; but leaſt of all from one ariſing from flatulencies, and a ſpaſmodic contraction of the veſſels produced by an inordinate motion of the ſpirits: but by what ſigns theſe different kinds of anguiſh may be diſtinguiſhed, will be declared hereafter.

APH. DCXXXII.

IF therefore ſuch an anxiety continues long, it will produce about the vital organs inflammations, polypous concretions, ſudden gangrenes with intollerable oppreſſion, ſoon followed with death. But if the cauſe of the anxiety is ſeated in the hypochondria, it will occaſion the greateſt uneaſineſs and ſickneſs at the ſtomach, the other viſcera being leſs ſenſible of pain; after this, it will occaſion certain putrefactions of the blood in the large and weaker veſſels of the abdominal viſcera; whence gangrenes, a putrefaction of the liver, and a fatal dyſentery from this putrefaction.

If

If the cauſe of the anxiety is ſeated in the vital organs, that is, in the heart and lungs, it is known from the pulſe and reſpiration; for the reſpiration is difficult, the pulſe wavering, and the extremities cold.

If the cauſe of the anxiety is ſeated in, &c.] Although this kind of anxiety is not ſo fatal as the firſt, yet it may be attended with many bad conſequences, and likewiſe affects the patient with a moſt troubleſome ſenſe of oppreſſion. This is diſtinguiſhed from the former by an eaſier reſpiration, and a pulſe ſufficiently free, though feveriſh. But it is remarkable, that though the cauſe of the diſeaſe is ſeated in the liver, yet the chief ſenſe of illneſs is perceived at the ſtomach, and its upper orifice, called *cardia*. Here are ſeated large nerves from the par vagum, or eight pair, and thence diſtributed to all the abdominal viſcera; perhaps that ſenſe of anguiſh in this part proceeds from theſe nerves, when the circulation of the humours through the abdominal viſcera is diſturbed.

If now we conſider that the blood ſtagnates in the *vena portarum*, and that the whole liver is ſtuffed up with impervious blood, it will eaſily appear how many and how great diſorders may be feared from this cauſe. For the blood of the *vena portarum* contains the immediate matter of the bile; but the veſſels containing the bile already ſecreted are compreſſed by the adjacent, obſtructed, and diſtended veſſels; and frequently alſo the cyſtic and hepatic ducts are obſtructed in theſe diſeaſes; hence the worſt putrefaction may be feared. For the bile ſpeedily corrupts by ſtagnation, and too great heat; and if the blood is at the ſame time urged into theſe obſtructed veſſels by the force of a fever, there is juſt reaſon to fear a deſtruction of the veſſels, an extravaſation of the humours, and a gangrene, eſpecially as the liver is ſoft and friable.

APH. DCXXXIII.

HENCE the phyſician certainly knows the cauſe and nature of ſuch an anxiety, and what prognoſtic may be drawn from it, and alſo to diſtinguiſh an anxiety ariſing only from a diſorder of the nervous ſyſtem without a preceding fever, from one that ariſes from an acute inflammation, which ſhews itſelf by its proper ſigns; and thence comparing theſe with the violence, duration, and part affected, will be able to form a true judgment of them all: and why anxiety almoſt in every diſeaſe cloſes the tragedy? Why a ſpaſmodic anxiety is attended with little or no danger, an inflammatory with the greateſt? Why toſſing, ſighing, difficulty of breathing, and conſtant wakefulneſs are the forerunners of death in inflammatory and impoſtumating diſeaſes?

Why anxiety almoſt in every diſeaſe cloſes the tragedy?] If we except thoſe diſeaſes which extinguiſh life in a moment, all dying people ſuffer the moſt ſevere anguiſh. For the powers of the heart are then weakened, and are unable to propel the blood to the extreme parts of the body, whence a paleneſs and coldneſs of the extremities. By this cold the cutaneous veſſels are conſtringed,—the venal blood drove to the right ventricle of the heart;—the arteries are likewiſe contracted, and being no longer diſtended with blood by the now weakened force of the heart, repel the blood in a retrograde motion towards the heart; whence there will ariſe ſo great a reſiſtance to the left venticle, as to be unable to empty itſelf, and therefore the pulmonary veins will likewiſe be incapable of evacuating their blood into

into the ſame; hence the lungs will be filled with blood, and the greateſt reſiſtance will be at the right ventricle, which dying people endeavour to remove by the utmoſt efforts of reſpiration: the pulmonary arteries remain full,—the right ventricle beating quickly, ſtill more diſtends thoſe arteries already full, and forces out a humour thicker than uſual into the air veſicles of the lungs, fills the trachæa and its branches; hence that rattling in the agonies of death.

Why a ſpaſmodic or nervous anxiety is attended with, &c?] Becauſe when a nervous anxiety brings on a fainting, the ſpaſm goes off; for then the heart cannot propel the blood with due force to the encephalon, and therefore the motion of the ſpirits through the nerves muſt be interrupted. This is evident in hyſterical women, who, when the muſcles of the gula are contracted by a ſpaſm, retain the air that was before received into the tube of the æſophagus, where being expanded by the heat of the parts, forms a large tumour, which compreſſing all the adjacent parts, occaſions a ſenſe of inſtant ſuffocation. But ſo ſoon as they begin to faint, the ſpaſm ceaſes, the confined air is diſcharged by ructus, and the diſorder goes off. In a convulſive aſthma the caſe is the ſame; for the ſpaſm terminating, while the patient ſtruggles for life, gives him an opportunity to recover; and though he ſuffers a hundred fits, he always recovers, unleſs polypous concretons, or morbid dilations of the veſſels near the heart ſhould happen, or in the heart itſelf, and then ſudden death muſt enſue.

But in an inflammatory anxiety, the impervious blood heſitating about the extremities of the arteries, and being drove by the heart againſt the obſtruction, expels the moſt fluid parts, and condenſes the reſt; whence the cauſe of the diſorder is every moment increaſed, and death ſoon follows, unleſs the obſtructing matter is ſpeedily diſſolved.

Why toſſing, ſighing, &c.] The common people have obſerved, that a concurrence of all theſe

ſigns

ſigns is fatal, and by an apt phraſe ſay, that the patient is taken with death. But it is to be obſerved, that a reſtleſs agitation of the body is not always a fatal ſign, unleſs it is attended with a ſhortneſs of breath.

APH. DCXXXIV.

HENCE alſo it appears, what different methods of cure are required to alleviate the ſeverity of this diſorder; all which methods may, however, be readily known and applied, when the nature of the ſymptom itſelf is known. When therefore it is diſcovered that the cauſe is ſpaſmodic or nervous, it is removed by ſoftening the acrid irritating matter; (603, to 605.) by expelling the ſame by vomits, purges, ſweats, diuretics, and abſterſives; by diluting with warm watery liquors; by quieting the affections of the mind; by relaxing the fibres, veſſels, and viſcera by the means directed in Aph. 35, 36, 54, 55; by reſtraining the violence of the ſpirits with anodynes and narcotics. But if the anxiety ariſes from an inflammatory viſcidity, the cure is effected by diſſolving and diluting the fluid, and by relaxing the veſſels, and laſtly, by moderating the impetus of the vital fluids; which is chiefly done by plentiful drinking of warm water, boiled with honey and the farinaceous vegetables, acidulated with nitre, or the juice of lemons, and gently impregnated with ſpices; by fomentations, cataplaſms, epithems, and plaſters applied to the parts affected, conſiſting of diluent, relaxing, emollient, and anodyne ingredients; by glyſters made

made of the like ingredients injected often, and in ſmall quantities, in order to be retained a long time, if poſſible; by vapours of warm water mixed with emollients, and often drawn into the lungs, through the mouth and noſtrils.

This aphoriſm wants no comment, being ſufficiently explained by what has been ſaid before.

APH. DCXXXV.

BUT if at any time the ſeverity of a diſorder requires a ſpeedy and ſafe cure, it is certainly here.

Of Thirst in Fevers.

APH. DCXXXVI.

THIRST has for its cauſe a dryneſs of the body, and imperviouſneſs of the fluids, a ſaline, alcaline, bilious, and oily acrimony, or putrid excrements retained in the *primæ viæ*.

Dryneſs of the body.] In a healthy perſon the whole ſurface of the ſkin, the eyes, noſtrils, and internal parts of the mouth, &c. are moiſt. When this moiſture is wanting, dryneſs enſues, which is always accompanied with thirſt.

An imperviouſneſs of the fluids.] The fluids are ſaid to be impervious when they cannot freely paſs through the veſſels. In this ſtate of the fluids, thirſt is always perceived, and the perſon is admoniſhed, from an healthy inſtinct of nature, to take ſome diluting and attenuating drink.

A ſaline, alcaline, &c.] All our humours (as was obſerved before) are naturally inſipid, except the bile and urine, which are partly excrementitious; and when they degenerate from this mild diſpoſition, they are not only uſeleſs, but even pernicious, and are therefore by a natural law expelled the body, by the inteſtinal, renal, or other emunctories. If our humours become acrimonious from any cauſe, thirſt enſues, which calls for ſome watery drink to dilute the acrimony, that it may be ſpeedily diſcharged by the uſual paſſages. Thus any thing very ſalt eat for dinner, will occaſion a thirſt during the afternoon, until the muriatic acrimony is waſhed out of the body by diluent liquors. The like thirſt ariſes from eating too much ſtrong pickles, ſauces of garlick, onions, muſtard, horſeradiſh, and the like, things that are already alcaline, or at leaſt inclined to it. But when acrimony is wrapped up in an oily tenacity, it occaſions the moſt intenſe thirſt, and is with difficulty waſhed out with watery drinks, as is evident in thoſe who have eat much fat bacon, or the beſt meats preſerved with ſalt. Oils alſo, howſoever mild in themſelves, may, by the heat of the body, be changed into the moſt rancid acrimony, and then the moſt intenſe thirſt follows. Thoſe who eat too much fat meat, if the ſtomach is weak, will belch up a mere oil ſome hours after dinner, which being ſpit into the fire, will raiſe a vivid flame, and often offend the fauces by its acrimony. This is called a bilious acrimony, though it be different from the bile itſelf, which is never merely oily, but ſaponaceous. Thus alſo the ſweeteſt butter, by frying in a pan, turns bitter, and acquires the like oily bilious acrimony. Watery liquors alone cannot dilute ſuch acrid oils, and therefore the moſt obſtinate thirſt ariſes, incapable of being allayed, but by ſaponaceous and acid ſubſtances, ſuch as oxymel, the juices of garden fruits, jellies, &c.

Putrid excrements, &c.] By the primæ viæ, we mean thoſe paſſages which firſt receive, contain, and

alter the aliments, and draw from them nouriſhment for the whole body, the uſeleſs remains being afterwards diſcharged by the anus. Putrid excrements are frequently accumulated in theſe paſſages, either from humours conveyed thither, or from a ſpontaneous putrefaction of the aliments. That great thirſt may ariſe from this cauſe, we are aſſured from practical obſervation, although there be no great acrimony in the blood and other humours, nor putrefaction, nor even any ſigns denoting great dryneſs, or an impreviouſneſs of the humours. But putrid bile excites both thirſt and other febrile ſymptoms of the worſt kind, all which are ſoon removed, when it is diſcharged by a vomit. This thirſt is known by a foul tongue, a bitter and diſagreeable taſte, a ſickneſs at the ſtomach, and a loathing of food.

APH. DCXXXVII.

HENCE therefore thirſt almoſt conſtantly denotes the preſence of one or more of the above cauſes.

APH. DCXXXVIII.

THIRST therefore points out all thoſe ill conſequences which may ariſe from the cauſes mentioned in Aph. 636.

The prognoſis here varies according to the cauſe which produces the thirſt, that is, if the thirſt proceeds from dryneſs, it ſhews a deficiency of the thinner humours, and that all the ill conſequences ariſing from thence may be feared. If from an impervious of the fluids, the lungs and the brain will firſt be affected, hence anguiſh, difficulty of breathing, delirium, &c. may be expected. If from a ſaline acrimony in the blood, there is danger of

hæmorrhages, pains, &c. from an eroſion of the ſmall veſſels: if from an alcaline, oily, or bilious acrimony, all the ill conſequences of a ſpontaneous alcaly deſcribed in Aph. 85 and 86, may be foreſeen.

APH DCXXXIX.

THIRST therefore ought always to be immediately relieved, more eſpecially in acute diſeaſes.

APH. DCXL.

WHICH is effected, 1. By drinking of watery, ſubacid, nitrous, and demulcent liquors, made warm, and taken frequently, but in ſmall quantities at a time. 2. By fomenting, waſhing, and gargling the noſtrils, mouth, and fauces with liquors of the ſame kind. 3. By fomentations, epithems, and cataplaſms of the like kind applied to the hypochondria. 4. By glyſters of the ſame materials, retained as long as poſſible.

1. As in fevers the ſalts and oils of the blood become acrid, and incline to putrefaction, ſubacids are very properly added to watery liquors, as they reſiſt all putrefaction, and are alſo the beſt remedies againſt thirſt from that cauſe: hence the juices of citrons, oranges, currants, &c. become ſo beneficial, when mixed with watery drinks. To theſe, nitre and its various preparations may be added, becauſe they likewiſe reſiſt all putrefaction, and at the ſame time reſolve the inflammatory lentor. But to remedy the too great dryneſs, and ſoften the acrimony of the humours, oats, barley, and the like farinaceous grain

are boiled in water, which are likewiſe correctors of putrefaction, as they ſpontaneouſly turn ſour.

As many people in fevers deſire cold drink, it would ſeem reaſonable to indulge them with it ſometimes. It is indeed true, that cold drink is the moſt pleaſing and refreſhing; but then it has many bad conſequences. For cold drink conſtringes the intercoſtal and diaphragmatic veſſels as it paſſes through the æſophagus, and when it gets into the ſtomach, may by its coldneſs do great miſchief to the liver. The moſt fatal pleuriſies, peripneumonies, and ſudden death, have often followed, when people overheated have drank freely of cold liquors. Yet it cannot be denied, that the drinking of cold water has ſometimes removed fevers. Galen had often ſeen many patients freed from an ardent fever by drinking of cold liquors; but then this happened when the humours were concocted, and therefore at a time when the violence of the fever was going off. But Celſus adviſes a great quantity of cold water to be given, even in the greateſt increaſe of an ardent fever; but ſoon after adds, that this remedy ſhould only be given to thoſe, "who have no pains, nor "any tumour of the præcordia, nor obſtruction "either in the lungs or fauces." [a] It ſometimes happens in continual fevers, eſpecially thoſe of the putrid kind, that the blood tends to a putrid diſſolution: in this caſe, the drinking of cold water would not be ſo injurious, as there is leſs reaſon to be afraid of coagulating the blood. But all that has been ſaid only proves, that drinking of cold liquors has been ſometimes uſeful, when the patient has deſired them; and that we cannot conclude, from ſome extraordinary caſes, that could drink ought to be given to feveriſh patients, no more than ſalted herrings, bacon, and the like, becauſe ſometimes fevers have been cured by theſe, when the patient has had a very great deſire for them.

[a] Lib. iii. pag. 137.

It is highly neceſſary for the patient to take his drinks in a ſmall quantity at a time; for by drinking too much at once, the ſtomach is often ſo far diſtended as to occaſion ſickneſs and vomiting, whereby all the liquor is thrown up again. Beſides, as an impervioufneſs of the blood is often the cauſe of thirſt, ſmall quantities taken at a time, mixes with the venal blood, and is, as it were, ground by the action of the veſſels; hence the impervious particles are more readily broke and divided. Put when there is a great quantity of water poured into the veins, and mixed with the blood at once, it is commonly diſcharged again, either by urine or ſweat, before it is intimately mixed with the blood by the action of the veſſels. Various forms of agreeable drinks, for allaying thirſt, may be ſeen in the *Materia Medica* of our author under the preſent number.

2. By fomenting, waſhing, &c.] This admonition is of great moment in the cure of fevers; for by keeping theſe parts continually moiſt, moſt happily allays the thirſt. If the tongue, and internal parts of the mouth remain dry, though the patient drinks ever ſo much, the thirſt will continue. In dropſical people, the thirſt is uſually beſt allayed by often waſhing the mouth with water, and a ſixth part of vinegar.

3. By fomentations, epithems, &c.] All theſe remedies give the humours a more free and eaſy paſſage through the veſſels, and, at the ſame time, contribute towards leſſening the thirſt.

4. See what has been ſaid of glyſters in the comment to Aph. 634, 636, and elſewhere.

APH. DCXLI.

BUT if intenſe thirſt is alſo accompanied with great weakneſs, then may rich wines, and often ſpirits, be ſafely mixed, and given with the above mentioned drinks.

All

All the remedies mentioned in the preceding aphoriſm convey a great quantity of water into the blood; but if weakneſs attends, theſe liquors cannot be propelled with due force through the veſſels, whence the patient will be oppreſſed, as the maſs of fluids to be moved is too much increaſed by theſe liquors; or the water will be collected in the cavities of the body, and occaſion a dropſy. In this caſe, ſuch a quantity of wine is to be added to theſe drinks as will ſuffice to renew the ſtrength, and not hurt by too great a ſtimulus. See Aph. 605, N°. 2. Even ſpirits themſelves, ſuch as brandy, and the compound ſpirits of the ſhops, will be here proper, if they are diluted with water. Forms of the like drinks are inſerted in the *Materia Medica* under the number of this aphoriſm.

Of a NAUSEA in FEVERS.

APH. DCXLII.

NAUSEA is a fruitleſs endeavour to vomit, attended with a ſenſe of horror; it has, therefore, for its proximate cauſe a ſlight convulſion of the muſcular fibres of the fauces, œſophagus, ſtomach, inteſtines, and abdominal muſcles; 1. This ariſes from an acrid, putrid, bilious matter, which propelled into the empty ſtomach, and aſcending into the fauces, ſtimulates and irritates both; whence the other parts are, by conſent, drawn into the like motions. This cauſe of a nauſea is known by previous faſting, by a ſtinking breath, and by a foul mouth, tongue, and fauces; or, 2. It ariſes from a thick, viſcid, fluctuating matter, vellicating

cating thoſe parts. This kind of nauſea is known from the ſigns of glutinoſity. See Aph. 69 to 75; or, 3. It ariſes from a ſlight inflammation of the ſtomach, œſophagus, inteſtines, and adjacent viſcera, which is known from the ſigns peculiar to inflammations of theſe parts; 4. From the remembrance of ſomething formerly taken, which occaſioned the like nauſea; and, laſtly, from an irregular motion of the nervous fluid, from whatever cauſe excited; which is known by a delirium, convulſion, vertigo, and trembling.

A nauſea differs from a vomiting only in degree, and therefore all the cauſes which produce a nauſea may alſo produce a vomiting, if they are increaſed; and, on the contrary, all the cauſes of vomiting in a leſs degree, will leave a nauſea, as their effect. As vomiting is a violent expulſion of what is contained in the ſtomach by a convulſion of the muſcular fibres of the fauces, œſophagus, &c. ſo is a nauſea a ſlighter convulſion of theſe parts, but without being able to effect that forcible exploſion of what is contained in the ſtomach. We ſhall now inquire into the remote cauſes of a nauſea, which may be reduced into five diſtinct claſſes, of all which we ſhall treat ſeparately.

1. An acrid, putrid, &c. matter lodged in the ſtomach, is a very frequent cauſe of a nauſea or ſickneſs; for the liver ſeparates a great quantity of bile from the blood, which it diſcharges by an excretory duct into the duodenum. But when the ſtomach is empty, the pylorus is open, and, therefore, humours collected in the duodenum from the pancreas, liver, and gall-bladder, may regurgitate into the ſtomach; hence a great quantity of acrid humours is collected in the ſtomach of a healthy perſon. If now the bile becomes more than uſually acrid, or is accumulated

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in the ſtomach, an irritation may thence ariſe ſufficient to produce a nauſea; and, alſo, if the ſame humour regurgitates into the fauces. But as the bile naturally inclines to putrefaction, and, as the air has free acceſs to the bile, and other humours in the ſtomach, it is very evident that a putrefaction of theſe humours may follow in a very little time. But if the cyſtic bile, already in ſome meaſure corrupted by the febrile heat, is conveyed into the ſtomach, all theſe diſorders muſt be increaſed.

2. The *primæ viæ* are by nature lined with a mucus, which not only lubricates the parts, but likewiſe defends them from being eaſily injured by rough bodies, or acrid ſubſtances taken into the ſtomach, and when it has anſwered theſe purpoſes, is, together with the fæces, diſcharged by ſtool. But when this mucus is tougher than uſual, or the bile weaker and ſmaller in quantity, it oppreſſes the ſtomach, excites an irritation and nauſea often of long continuance. This diſorder frequently happens to men of letters, and thoſe who lead a ſedentary life, more eſpecially if they are advanced in years; for the abdominal viſcera being leſs agitated by reſpiration, the bile becomes inactive, and is often ſo inſpiſſated as to be unable to paſs through the narrow neck of the gall-bladder. In many people alſo the *primæ viæ* are diſpoſed to produce this mucus, and a very great quantity is often collected. Aliments that are too glutinous or viſcid will produce the ſame, eſpecially if the ſtomach is weak, and the bile inactive. But whether this mucus adheres to the fauces, or œſophagus, or fluctuates in the ſtomach, it will have nearly the ſame effect that a feather has in irritating the parts;—— whence a perpetual nauſea ſo long as the mucus remains. It is likewiſe probable that a nauſea will follow from too great a quantity of mucus adhering to the inteſtines; for when theſe are irritated by wounds, a nauſea and vomiting enſues. Worms, creeping in theſe parts, produce the like effect, merely from

from a mechanical irritation. This diſorder is directly oppoſite to that ariſing from acrid, putrid matter; for a nauſea, produced by a tough mucus, is often cured by bitters, and the bile of animals; but all theſe remedies would rather increaſe the nauſea ariſing from too acrid or putrid bile.

3. If an inſipid mucus can excite a nauſea, and ſometimes even a vomiting, much more ought the ſame to be expected from that irritation which ariſes from a ſlight inflammation of theſe parts.

4. It is certain that a nauſea may be excited only from the remembrance of a thing which before occaſioned one.

5. That an inordinate motion of the nervous fluid may produce a nauſea is evident from hyſterical women, and from men who have the ſame weak ſyſtem of nerves, eaſily ſuſceptible of irritation. But even robuſt people cannot long ſupport the toſſing of a ſhip at ſea, if they have not been accuſtomed to it, without being troubled with a giddineſs, and ſoon after with a nauſea and vomiting. Many are ſeized with the ſame, if they are carried in a coach with their back towards the horſes, and alſo from a ſwift, circular motion. There is, moreover, a wonderful conſent between the ſtomach and encephalon, inſomuch, that the latter being affected eaſily produces a nauſea and vomiting in the former. From the ſame cauſe a nauſea ariſes when one is diſordered with violent paſſions of the mind. Nor does it matter from what cauſe this inordinate motion of the ſpirits ariſes; for a nauſea may ariſe from an irritation of the nerves in parts very diſtant from the ſtomach. A plentiful diſcharge of limpid urine is a moſt certain ſign that the nauſea proceeds from this cauſe, and this is ſtill more eſpecially evident, if a delirium, convulſions, vertigo, or tremor are preſent at the ſame time. But it muſt be remembered, that ſordes or foul humours, whether exiſting in the ſtomach or adjacent viſcera before the fever, or collected during

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ing the fever, may disturb all the functions of the brain, and excite all these symptoms, though the cause is not in the brain, but in the stomach itself. See more of this when we come to treat of a delirium in fevers.

APH. DCXLIII.

IF this symptom continues long, it occasions a loss of appetite, an aversion to drink and medicines, and at length a vomiting, with the numerous disorders that may follow from thence; of which the chief are weakness, a putrid or alcaline acrimony and dryness.

A slight nausea is easily tolerable, but a long continued one may produce the worst consequences; for as the body cannot be recruited while this symptom lasts, a weakness must follow, and the disorders mentioned in the text. See Aph. 80. This febrile symptom ought, therefore, to be immediately relieved, but in what manner will be shewn in the following aphorism.

APH. DCXLIV.

A NAUSEA, arising from the first cause, Aph. 642, is cured by acids, saline, and watery drinks, with food and medicines of the same kind, and also by lenient purges of the same nature; and by strengthening the fibres with acid, austere corroborants; or, if it does not yield to these, by giving an emetic. But that which arises from the second cause is removed by diluting, attenuating, purging, and vomiting medicines. But if it derive its origin

gin from the third cauſe, then it will not yield till thoſe diſeaſes are cured according to the directions hereafter given. The fourth ſpecies of nauſea is removed by forgetting and avoiding the objects which occaſioned the nauſea. But the fifth kind is cured by auſtere or aſtringent medicines, by reſt, narcotics, and cold water.

As a nauſea may ariſe from ſo many different cauſes, it is apparent that no general method of cure can be preſcribed ſuitable to all the kinds of loathing; we ought, therefore, carefully to diſcover by the ſigns mentioned in Aph. 642, the particular cauſe, and then a juſt method of cure may be proſecuted.

1. When, therefore, a nauſea proceeds from a ſharp, putrid, bilious matter lodged in the ſtomach, it is cured by acid, ſaline, and watery drinks; and thoſe recommended before for febrile thirſt will be here likewiſe ſerviceable. Hence jelly of currants, lemon and citron juice, ſpirit of ſalt, vitriol, and ſulphur become ſo uſeful; for by theſe the bilious humour is not only diluted, but alſo prevented from putrefaction. Lenient purges of the ſame nature, which, by a gentle ſtimulus, diſcharge the offending matter by ſtool. Here cream and cryſtals of tartar, pulp of tamarinds, ſimple oxymel, &c. either given alone, or mixed with the former remedies, hold the firſt place. But as the tone of the ſtomach is often weakened by a nauſea, ſuch remedies will be uſeful as are auſtere, or have a roughneſs joined with their acidity, ſuch as marmalade of quinces, the juice of unripe mulberries boiled with honey, pomegranates, medlars, &c.

2. But when there is ſo great a quantity of putrid bile, or when it has acquired ſo great a malignity, that it cannot be corrected by theſe means, nothing then remains but to diſcharge it by a gentle emetic, leaſt

leaſt a ſtrong one ſhould increaſe the force of the fever.

3. But if the ſigns denote that the nauſea ariſes from a tough, viſcid matter, fluctuating in the ſtomach, or adjacent paſſages, it muſt firſt be diluted before it can be carried off by vomits and purges. Water dilutes and diſſolves all ſorts of mucus in the body; but thoſe who are troubled with this redundant mucus, have always a weak ſtomach, and a lax habit of body, ſo that a great quantity may prove injurious. In this caſe we muſt endeavour to diſſolve this glutinous matter by Venice ſoap, the inſpiſſated bile of animals, by alcaline ſalts, and by bitter and aromatic medicines, ſuch as wormwood, the leſſer centaury, gentian, or elicampane, &c. When it is diſſolved, and rendered moveable, it may be eaſily carried off by a vomit or purge.

4. It ought always to be inquired, with great attention, whether the nauſea ariſes from an inflammation of the ſtomach, or adjacent viſcera; for a vomit given, in ſuch a caſe, muſt do great miſchief. But a pain in theſe parts, with an acute fever, and a hard pulſe, give juſt reaſon to ſuſpect an inflammation.

5. That kind of nauſea which ariſes from an inordinate motion of the ſpirits is cured by reſt and opiates. A nauſea, from this cauſe, is generally attended or preceded with a vertigo. But to ſtrengthen the ſtomach, which, in theſe patients is generally weak, and very irritable, the auſtere medicines will be beneficial, as they ſo happily corroborate the too weak and lax fibres. See Aph. 28, N°. 4, to which add the drinking of cold water. Here evacuations, either by purging or vomiting, are almoſt conſtantly pernicious, ſince the cauſe of the diſeaſe does not ariſe from corrupt humours, but from a diſturbed motion of the ſpirits.

APH.

APH. DCXLV.

HENCE we may underſtand why a vomit or a purge is ſo uſeful when there is a nauſea, if given in the beginning of acute diſeaſes, and in what kind of acute diſeaſes? Why patients, in acute fevers, have ſuch an abhorrence to any thing fat, to fleſh, eggs, and fiſh; while, on the contrary, they covet water, acids, ſummer fruits, and cold drinks? Why medicines are of no ſervice to the patient, until the nauſea is removed? Why this ſympton is often incurable? And why ſuch diſeaſes go off, at laſt, with a ſudden, unuſual, and wonderful appetite?

Why a vomit or a purge, &c.] Becauſe, in theſe fevers, the nauſea ariſes from a corrupted, acrid bile ſtagnating in the ſtomach, or adjacent parts, which daily acquires a worſe degree of malignity by the heat of the fever, and the free acceſs of the air into theſe parts: hence vomitings, and, ſoon after, a putrid diarrhæa, often fatal, the patient's ſtrength being ſo much exhauſted in the progreſs of the fever, that he is no longer able to ſupport the diſcharge. But if the putrid, bilious matter is evacuated in the beginning of the diſeaſe by a vomit or purge, all theſe ill accidents will be prevented. This method is more eſpecially uſeful in acute, autumnal fevers, when the bile has been exalted by the ſummer heat. But in acute, inflammatory fevers, which appear in the beginning, or height of the ſummer, this method is often deceitful, becauſe the nauſea here ariſes from an inflammation of the ſtomach, and adjacent parts; in which caſe vomits eſpecially make every thing worſe.

Why

Why patients in acute fevers, &c.] Becauſe all theſe ſubſtances ſpontaneouſly degenerate into a putrid acrimony; and, as moſt of the functions are injured by the fever, the injeſta are either, with difficulty, or not at all, converted into good chyle, but follow their own ſpontaneous corruption. See Aph. 100. Hence provident nature urges the patient to crave watery liquors, acids, and every thing that can abate the febrile heat. Beſides, theſe alſo allay the thirſt, waſh out, and correct the putrid humours lodged in the primæ viæ, and diſſolve the concreted fluids by a mild ſaponaceous force.

Why medicines are of no ſervice, &c.] For as long as the nauſea continues, every thing is thrown up by vomit.

Why this ſymptom is often incurable?] This is ſometimes the caſe when the cauſes of the nauſea cannot be removed. For if the ſtomach, and adjacent parts, be inflamed, and the inflammation ſo violent that it cannot be reſolved, the nauſea thence ariſing will be equally inſuperable. Thus alſo a putrid vomica, or abſceſs in the liver, by a continual drain of its putrid matter through the hepatic duct into the duodenum, will excite a perpetual nauſea, until the abſceſs is firſt cured, which is often impoſſible. Vomits are here dangerous; and although the putrid matter ſhould be diſcharged, it will ſoon be collected again, and the nauſea return, which will continue in defiance of all remedies, except acids, eſpecially the ſpirit of ſea ſalt, by which it may be often a little mitigated. Old people, and men of letters, are often troubled with ſuch a nauſea, when the internal ſurface of the fauces, œſophagus, ſtomach and inteſtines are loaded with mucus. The like kind of nauſea, eſpecially in the morning, is often obſerved in thoſe who daily accuſtom themſelves to ſpirituous liquors.

And why ſuch diſeaſes, &c.] This is confirmed by numerous obſervations. See Tulpius Obſerv. Med. pag. 130, 135.

Of

Of Eructations and Flatus in Fevers.

APH. DCXLVI.

ERUCTATIONS have for their cauſe an elaſtic matter dilatable by heat, effervescence and fermentation, which one moment is confined, the next ſet at liberty,, by a relaxation of the parts wherein it was confined, and then forcibly exploded with a noiſe.

APH. DCXLVII.

HENCE the common air, ſalts of an oppoſite nature, ripe garden fruits, putrefying humours, and fermenting vegetables ſupply the matter of eructations and flatus, the force and ill ſmell of which vary according to the different nature of the bodies which produce them.

APH. DCXLVIII.

NOR yet will all theſe (647) produce any forcible exploſion, if they can freely paſs off; it is, therefore, evident, that a ſpaſmodic conſtraction and relaxation of the ſphincter gulæ, the œſophagus itſelf, of the upper and lower orifice of the ſtomach and inteſtines always concur to produce eructations, flatus, farts, and borborygmi.

APH.

APH. DCXLXIX.

IF theſe two cauſes concur (647, 648) they act powerfully, and continue a long time; and then the elaſtic matter being expanded by the heat and motion of the parts, and confined in a cavity, whoſe fibres are ſpaſmodically conſtringed, it dilates, diſtends, and excites pain in the confining membranes, compreſſes the adjacent parts, hence pains and intolerable anxieties, which preſently ceaſe when the flatus is diſcharged. See Aph. 220 to 227, and 631 to 634. But if to theſe is added the force of a fever, it occaſions the moſt inexpreſſible torture.

If, therefore, plenty of air, or ſuch ſubſtances as ſuddenly produce a great quantity of elaſtic matter, are confined in theſe paſſages, and, at the ſame time, this elaſtic flatus is intercepted by a ſpaſmodic conſtriction of the fibres, either from ſome acrid irritation, or a diſturbed motion of the ſpirits, the rarefaction will be increaſed by the heat and motion of the parts, more elaſtic matter will be added to the firſt, and the membranes gradually more and more diſtracted; whence the moſt dreadful diſorders will enſue. But if we conſider what was ſaid concerning pain at Aph. 220, it will be evident, that this gradual diſtraction of the membranes muſt produce intolerable pains. Beſides, the blood veſſels, diſperſed through the diſtended membranes, being compreſſed, or ſtraitened, will occaſion a violent inflammation, and ſtop the circulation, whence a ſudden and fatal gangrene. See Aph. 432.

But if a fever attends when air is pent up in theſe membranous parts, contracted by a ſpaſm, it is evident enough what bad conſequences may thence follow; for the air may be rarified immenſely by an

increaſed heat. Beſides, an inflammation may ſoon be raiſed by the fever, as the fluids are urged with an increaſed velocity through the veſſels greatly compreſſed by the diſtending flatus.

APH. DCL.

THE cure of this diſorder is effected, 1. By carrying off the matter (647), by diluents; by diſſipating the ſame with warm watery drinks, impregnated with ſpices; by rendering the effervescent ſalts perfectly neutral; by remedies which correct putrefaction, and ſtop fermentation; 2. By ſuch as aſſwage convulſions, deſtroy acrimony, and quiet the ſpirits, of which the principal are opium, and mild antihyſterics; 3. By warm, relaxing, anodyne glyſters, fomentations and epithems, made ſomewhat aromatic, and by the application of cupping-glaſſes to the abdomen, without ſcarifying.

1. When the air is intercepted by a ſpaſmodic conſtriction of the parts, it cannot eſcape until thoſe ſpaſms are removed. But the flatulent matter, ariſing from a fermentation, or putrefaction of the aliments, may be removed, or, at leaſt, corrected by watery diluents taken warm; for, by heat, their diluting and attenuating power is increaſed. To theſe drinks it is uſual to add agreeable ſpices, which, by their mild ſtimulus, gently irritate the ſtomach and inteſtines into more even contractions, by which their contents are urged forwards. But it is to be obſerved, that all aromatics, eſpecially thoſe made by diſtillation, if they do not immediately relieve, may be very injurious, by increaſing the ſpaſms by their too violents and often repeated ſtimulus; and, if the dif-

diſorder is attended with a fever and gripes, the uſe of theſe will be much more dangerous.

By rendering the effervescent ſalts, &c.] Oppoſite ſalts, when they are mixed and ferment together, generate a great quantity of elaſtic air, as appears by many experiments; but it is rarely that belching and flatus ariſe from this cauſe. Yet, if too great a quantity of alcaline ſalts be given to infants troubled with an acid in the primæ viæ, the ſtomach may be ſo far diſtended with flatus, as to conſtringe both its orifices, and produce fatal convulſions. It is, therefore, much ſafer to diſſolve the acid coagulum in the ſtomach by Venice ſoap, and afterwards diſcharge it by a gentle purge. But the uſe of the acid abſorbents, ſuch as crabs eyes, coral, and the like, is much better than theſe ſalts, as they do not ferment ſo ſtrongly with acids. If the cauſe of the flatus ariſes from oppoſite ſalts fermenting in the primæ viæ, the only remedy is to drink a large quantity of diluting liquors, or, to take oil of ſweet almonds, by which their acrimony is obtunded, and their action, upon each other, leſſened.

By remedies which correct putrefaction.] For putrid humours generate elaſtic air, which ſupplies the matter of flatus. Acids are, therefore, here proper, eſpecially the ſpirit of nitre and ſea ſalt, united by a long continued digeſtion, with alcohol of wine; for this reaſon. ſp. nitri dulcis has been recommended by ſome authors as a powerful carminative.

And ſtop fermentation.] Aliments, apt to ferment, are often the cauſe of flatus, ſuch as garden fruits eaten in large quantities, which immediately begin to ferment by the heat of the body, and more eſpecially when wine is drank after them. Nor are theſe hurtful only becauſe they generate a great quantity of elaſtic air, but, alſo, becauſe the ſpirit, produced by fermentation, is apt to raiſe ſpaſms. The beſt remedy, in this caſe, is immediately to expel the fermenting matter, either upwards or downwards; if this can-

not be done ſafely, the fermentation begun muſt be ſuppreſſed as ſoon as poſſible by the ſpirit. ſulphur. per campanum, or elſe by the earthy abſorbents.

2. Opium, and the mild antihyſterics only are here proper; becauſe the more acrid and heating, ſuch as ſpt. ſalis Ammoniac. the volatile, oily ſalts, and the like are apt to inflame.

3. When emollient glyſters have been uſed ſeveral times without ſucceſs, recourſe may be had to the more acrid, that by irritating the large inteſtines, the ſpaſms may be removed from the other parts, which ſometimes happens. I remember myſelf to have ſucceeded in this caſe, by injecting an ounce of ſal gem diſſolved in a pint of water; and I have ſometimes uſed glyſters prepared from black hellebore, colocynthis, and the like, with happy ſucceſs, when there were no ſigns denoting an inflammation already formed; for by theſe acrid ſtimuli a great quantity of flatus has been diſcharged, together with fæces. But when theſe have been tried, and the diſorder not alleviated, the diſturbances raiſed muſt be immediately compoſed by narcotics.

But the moſt effectual remedy to remove theſe ſpaſms, is the application of cupping-glaſſes. Galen long ago obſerved, that by theſe, pains ariſing from flatulencies, are immediately relieved, as if by a charm. The ancients were of opinion that cupping-glaſſes draw the air, or material cauſe of flatus from the deepeſt parts of the body. But modern obſervations evince, that air cannot paſs through the coats of the inteſtines, peritonæum, muſcles, fat, &c. into the cavity of the glaſs; for their efficacy ſeems to conſiſt in revelling the humours into thoſe parts of the body to which they are immediately applied. At the ſame time, the nerves diſperſed through the part under the cupping-glaſs are often irritated, by which means the ſpaſms raiſed in other parts may be removed. The method therefore

of

of burning the ſoles of the feet with hot irons, uſed in Aſia to eaſe ſevere pains of the cholic, does not ſeem unreaſonable. The acupuncture of the Japoneſe, aad the burning of Moxa upon various parts of the body, ſeem to operate in the ſame manner. See Ten Rhyne de Arthritid. pag. 119, &c.

APH. DCLI.

FROM all that has been ſaid, anſwers may be given to theſe otherwiſe obſcure queſtions; namely, what food, drink, poiſons, and medicines are flatulent? Why they are particularly ſo, when the firſt paſſages are empty? Why when they are wounded? Why when the abdomen is tight bound? And why hypochondriacal, hyſterical, convulſed and colicky people are ſubject to flatulencies?

What food?] Malpighi has demonſtrated, that true air is contained in the air-veſſels of plants; and Boyle and Dr. Hales have ſhewn, by many experiments, that a great quantity of elaſtic air is contained in many parts of animals, vegetables, and even foſſils. As therefore our aliments conſiſt of animals and vegitables, there will be a plentiful ſupply of the matter of flatus; and if they are alſo ſo acrid as to irritate the fibres of the ſtomach and inteſtines into ſpaſmodic contractions, both the cauſes of flatus will concur. Hence garlick, onions, turneps, and raddiſhes produce ſo great a quantity of flatus, becauſe they contain a great quantity of air, and irritate the *primæ viæ* by their acrid ſtimulus. But all theſe become much leſs flatulent by boiling, the elaſtic air which they contain being expelled by the heat of the water. All things which incline to fermentation or putrefac-

tion, and all glutinous ſubſtances, are likewiſe flatulent.

Drink.] Of all drinks water is the leaſt flatulent,—and the moſt flatulent are thoſe taken in the act of fermentation. Next to theſe are ſuch as have not yet fermented, but ſoon ferment by the heat of the body, as *muſt*, new wine, or ale without hops or ſome other bitter.

Poiſons.] The moſt corroding poiſons are flatulent, not becauſe they generate air, but becauſe they excite the moſt violent ſpaſms. If they have alſo a power of producing a ſudden putrefaction in the humours, they are the worſt of all. Hence arſenic and the ſharp cauſtic poiſons cauſe the abdomen to ſwell to a monſtrous degree.

Medicines.] All thoſe which are acrimonious are flatulent, under whatever denomination, eſpecially when given to thoſe whoſe nervous ſyſtem is eaſily irritable. Hence acrid purges and vomits excite gripes and flatus, and many things uſed under the title of medicines are flatulent, ſuch as ſummer fruits, garlick, onions, &c.

Why more particularly ſo when, &c?] Becauſe then the air wanders freely through the *primæ viæ*, and the influent bile and relicks of the ingeſta being rendered acrid, gently ſtimulates theſe parts, whence the air is here and there intercepted by ſlight ſpaſms, which afterwards going off, wanders with a murmuring noiſe; hence borborygmi. This acrimony of the bile is probably the cauſe why the empty inteſtines of hungry people murmur.

Why when they are wounded?] From the profuſe hæmorrhage, which occaſions ſpaſms and convulſions, as was obſerved at Aph. 232; but more eſpecially when the abdominal viſcera, and particularly the meſentery have been wounded. See Aph. 170. N°. 3.

Why when the abdomen is bound tight?] Becauſe the inteſtines are then compreſſed, and the free motion of the elaſtic flatus intercepted.

Why hypochondriacal, &c.] There are two kinds of diſorders uſually comprehended under the denomination of hypochondriacal. One ariſing from an atrabiliary feculence depoſited in the abdominal viſcera, diſturbing their action, and preventing a due elaboration of the chyle. For this reaſon the chyle degenerates into a crude, acid, oily, or a putrid alcaline acrimony, whence flatus, ſpaſms, &c. The other ariſing from an inordinate motion of the ſpirits, without any ſigns of an atrabiliary cacochymy, by which ſpaſms are excited, and the air contained in the *primæ viæ* intercepted ſo as to produce eructations and flatus. This is often the caſe in men who exerciſe their minds much, but their bodies little. For the ſame reaſons hyſterical women are alſo ſubject to flatulencies.

Convulſed?] For by convulſions all the functions of the brain, and the nerves ariſing from thence, may be wonderfully convulſed, no wonder then that the like diſturbance happens to the nerves diſperſed through the abdominal viſcera, whence ſpaſms and conſequently flatus, &c.

Colicky people?] Thoſe who are troubled with frequent pains in the *colon* are ſaid to be colicky. Theſe pains return often, and commonly ariſe from faces collected in this inteſtine, and intercepted in their free courſe through it. See more when we come to treat of an inflammation of the inteſtines in Aph. 963.

Of VOMITING in FEVERS.

APH. DCLII.

VOMITING is a violent expulſion, firſt, of the contents of the ſtomach, then of the inteſtines, and laſtly of the viſcera, which

empty themſelves into the latter. Its immediate cauſe is a convulſion of the muſcular fibres of the fauces, æſophagus, ſtomach, inteſtines, diaphragm, and abdominal muſcles; its remote cauſe, whatever ſtimulates the fibres above mentioned, or thoſe viſcera which are eaſily convulſed.

Galen indeed aſſerted, that, in vomiting, nothing is diſcharged but what is contained in the ſtomach; but experience proves the contrary: for both the biles paſs through the common duct into the duodenum, and are frequently diſcharged by vomiting; hence it is evident that there is a free paſſage for the contents of the inteſtines to get into the cavity of the ſtomach. But it is even certain from obſervations, that the contents of the more diſtant inteſtines may alſo come into the ſtomach, as in the iliac paſſion, &c. when the periſtaltic motion of the inteſtines is inverted. If therefore the inteſtinal contents can make their way into the ſtomach, it is evident that all the viſcera, which pour their ſecreted humours into the cavity of the inteſtines, may afford the matter expelled by vomiting, as the liver, ſpleen, and pancreas, the meſeraic and cæliac arteries. Hence the matter of vomiting may be various; for bile, phlegm, lymph, matter, ichor, atrabiles, &c. and even blood itſelf have been thrown up by vomit.

But although a convulſion of the æſophagus, fauces, and ſtomach excite a vomiting; yet theſe of themſelves do not ſeem ſufficient to expel all that is contained in the ſtomach; but requires alſo the preſſure of the diaphragm and abdominal muſcles. This ſeems probable from horſes, who never vomit, as the farriers unanimouſly teſtify, their ſtomachs being ſeated at a great diſtance from the abdominal muſcles, and conſequently without the ſphere of their action. But in dogs and cats, animals which eaſily vomit,

vomit, the ſtomach is very much expoſed to the action of theſe muſcles, as it is likewiſe in ruminating animals. Add to this, that the diaphragm is of a weaker fabric in horſes, as it has been found ſplit through its whole lengh in ſome of theſe animals, which have died ſuddenly after violent labour. Moreover, the upper orifice of the ſtomach in a horſe is furniſhed with a valve, which renders the return of what is contained in the ſtomach difficult; but as it only fills two-thirds of its diameter, it cannot prevent the more fluid parts from being expelled by vomit. Whence I think it is evident, that a ſlight kind of vomiting may ariſe from a convulſion of the muſcular fibres of the ſtomach; but that ſtrong vomiting requires a convulſion of the diaphragm and abdominal muſcles, and all this ſeems to be further confirmed by the appearances which we obſerve in a perſon vomiting.

Theſe appear to be the proximate cauſes of vomiting; but the remote cauſes may be numerous, and very different, as we ſhall ſhew in the two following aphoriſms.

APH. DCLIII.

VOMITING therefore happens ſometimes from a fault in the ſtomach, either convulſed, inflamed, ſuppurated, ſcirrhous, or cartilaginous, joined with an acute fever; it is often very ſtubborn, and may be known from a knowledge of the diſeaſe itſelf, which being removed, the vomiting ceaſes likewiſe.

APH. DCLIV.

VOMITING may again proceed from a fault in the viſcera and circumjacent parts affected in the like manner, and irritated by the

the ſtomach diſtended with food: hence a very obſtinate vomiting, without any manifeſt cauſe, accompanied with a fever.

The ſituation of the ſtomach is ſuch, that on the right ſide it is covered with the liver, on the left by the ſpleen; behind it is ſeated on the pancreas, and the colon is in contact with its fundus. If therefore the diſorders enumerated in the preceding aphoriſm ariſe in thoſe parts contiguous to the ſtomach, it is ſufficiently evident that the moſt obſtinate vomiting may thence ariſe, even though there is no diſorder in the ſtomach itſelf, nor any thing injurious lodged in its cavity. This ought therefore to be thought of in every chronical obſtinate vomiting, and whether any ſigns appear which denote this or that viſcus to be affected. We obſerved before, at Aph. 642. N°. 3. that a nauſea and vomiting ariſe from an inflammation of the liver. When the gall-bladder is turgid with bile, and its excretory duct obſtructed, profuſe vomitings enſue. A ſtone ſticking in the ureter occaſions the ſame; and vomiting likewiſe follows an inflammation of the inteſtines, and ſuppurating tumours of theſe parts, all which diſorders will be increaſed, if a fever attends.

APH. DCLV.

AND laſtly, a vomiting may proceed from all the cauſes of a nauſea increaſed (Aph. 642.) from whence it is known how it ought to be treated and cured.

APH. DCLVI.

IF a vomiting continues long, it occaſions an atrophy, the iliac paſſion, convulſions, and all the effects of a great and obſtinate nauſea enumerated at Aph. 643.

We come now to conſider what diſorders are to be feared from vomiting, in order to form a prognoſis. The matter ejected by vomit ought to be here conſidered, becauſe the prognoſis varies as that differs. Hippocrates obſerves, that vomiting is beneficial when the matter expelled conſiſts of bile and phlegm, and not very thick; but a vomiting of unmixed humours is bad. He condemns a livid, porraceous, or blackiſh matter; and that which conſiſts of all theſe colours he obſerves to be fatal. He likewiſe pronounces a ſubputrid and foul-coloured matter bad; when it is livid and offenſive, ſpeedy death. Moreover, if the vomiting continues, all the nouriſhment taken into the body is expelled, and conſequently will be waſted with a true atrophy for want of nouriſhment.

Iliac paſſion.] Sydenham remarks, that violent vomitings, in the beginning of fevers, have ſometimes been the occaſion of this diſeaſe, the fever depoſiting ſharp malignant humours in the ſtomach and inteſtines, which, by irritating their ſenſible membranes, invert the periſtaltic motion.

Convulſions.] Vomiting itſelf is a convulſion of the muſcular fibres of the ſtomach, &c. as was obſerved at Aph. 652. It is therefore no wonder, if, by theſe repeated convulſions, the whole nervous ſyſtem ſhould be diſordered, and excite convulſions in other parts of the body; more eſpecially as the nerves diſperſed through the ſtomach, inteſtines, and meſentery have ſo great an influence upon all the other

other nerves of the body. See the comment to Aph. 233. Add to this the effects of vomiting, and there will be juſt reaſon to fear convulſions and many other diſorders from it, when violent.

APH. DCLVII.

IF the vomiting ariſes from the cauſes enumerated in Aph. 653. and 654, the cure is to be taken from the hiſtory of theſe diſeaſes.

No general method of cure can here take place; but if the vomiting ariſes from a fault of the ſtomach itſelf, its ſubſtance being diſeaſed either by inflammation, ſuppuration, ſcirrhus, &c. or from the like diſorders in the adjacent viſcera, the cure is to be taken from the hiſtory of thoſe diſeaſes, of which we ſhall treat hereafter, under the title of inflammatory diſeaſes of the viſcera.

APH. DCLVIII.

IF the vomiting proceeds from the cauſes mentioned at Aph. 653 to 655, then ought the remedies directed at Aph. 644, to be given, eſpecially opiates and corroborating, attracting, and diſſipating epithems.

Of all theſe we treated under a nauſea, and diſtinguiſhed the ſeveral cauſes of loathing into five claſſes, with the proper method of curing each. But ſometimes putrid, bilious, or thick viſcid humours fluctuate in the ſtomach, or are collected in the adjacent parts; and though expelled by emetics and cathartics, yet vomiting immediately enſues, becauſe the ſtomach is eaſily irritated after ſo many repeated convulſions in frequent vomitings. Opiates are here the chief remedy, with the ſaline draught of Riverius. Such

Such medicines as will ſtrengthen the over-weakened ſtomach are alſo uſeful, forms of which are inſerted in our author's *Materia Medica*, under N°. 644. Epithems and fomentations of the like ingredients, applied to the region of the ſtomach, are alſo extremely beneficial; and ſo are cupping-glaſſes, without ſcarification, for the reaſons mentioned at Aph. 650. N°. 3.

APH. DCLIX.

HENCE the reaſon is evident why it is ſo difficult to ſuppreſs vomiting in many acute fevers; hence alſo appears the falſity and danger of the rule which aſſerts, that *vomiting is cured by vomiting*; why ſudorifics frequently remove vomiting, as in the plague; why it frequently ceaſes when a criſis happens, as in the ſmall-pox; why it is often removed by bleeding, as in acute inflammatory diſeaſes; why thoſe who continually vomit in the beginning of an acute fever, not of the inflammatory kind, have a critical diarrhæa towards the end, which might have been prevented by an emetic in the beginning of the diſeaſe; why a vomiting of every thing as ſoon as taken is one of the worſt ſigns in acute diſeaſes. A ſingultus may ariſe from the ſame cauſes, which produce a nauſea, and may be cured by the ſame remedies.

So difficult to ſuppreſs vomiting, &c.] Becauſe in acute fevers the ſtomach, inteſtines, and adjacent viſcera are often inflamed; and from an inflammation a vomiting enſues, which cannot be removed until the inflammation is cured, which often cannot be done, or with great difficulty. Injuries done to the brain occaſion a vomiting of eruginous bile; and when

when the functions of it are greatly disturbed in inflammatory diseases, a vomiting attends, which cannot be removed, unless the original causes are first cured.

Falsity and danger of the rule, &c.] That *vomiting is cured by vomiting*, has been esteemed a general rule in practice, is past all doubt; but, from what has been said, the danger of giving emetics in all kinds of vomiting is sufficiently evident.

Why sudorifics, &c.] This was observed by Sydenham, who always stopt vomiting in the plague, by the use of sudorifics; but when a sweat once begun was interrupted by any cause before the pestilential matter was perfectly expelled, and the symptoms returned worse than before.

Why it frequently ceases when a crisis, &c.] Because the variolous contagion affects the stomach in the first stage of the disease, till it is deposited on the surface of the body by the fever, when the vomiting and other symptoms cease. See more when we treat of the small-pox.

Why—bleeding in, &c.] Because in these diseases the vomiting often arises from an inflammation either of the stomach, or adjacent parts.

Why those who continually vomit in, &c.] Because in acute fevers the stomach is continually irritated by a redundant acrid bile, which being rendered more malignant by stagnation and the fever, is afterwards conveyed into the intestines, and excites a diarrhæa, which is often dangerous, the patient's strength being already greatly weakened by the disease. This observation holds true, more especially in that kind of continual fever, which frequently occurs in autumn: but a vomit given in the beginning of these fevers, although the matter it brings up is very inconsiderable in quantity, and without any apparent bad quality; yet when a vomit is given even in the progress of the disease, a great deal of foul bilious matter is often expelled, by which the patient

is

is relieved, the fever quietly going through its courſe without any bad ſymptoms, and the diarrhæa, ſo often fatal, prevented. The only difficulty here is, to diſtinguiſh whether the fever is inflammatory or not; but the ſeaſon of the year, and an exact obſervation of the *juvantia* and *lædentia* will afford conſiderable light: for theſe diſeaſes prevail moſtly in autumn, the ſpring and the ſummer being more commonly productive of inflammatory diſeaſes.

Why a vomiting of every thing as ſoon, &c.] Becauſe it always denotes an inflammation of the ſtomach, diaphragm, or adjacent viſcera: at the ſame time ſuch a vomiting prevents the uſe of cooling liquors, which are ſo neceſſary in the cure of ſuch fevers.

A ſingultus may ariſe, &c.] What a ſingultus is, ſee our author's inſtitutes, ſect. 808. We here only conſider a ſingultus, or hiccup, ariſing from thoſe cauſes which may produce a nauſea, or vomiting, becauſe it maybe cured by the remedies. If it ariſes from profuſe evacuations, they are to be quickly ſuppreſſed, and the loſt humours ſupplied by nouriſhing diet;—if from fulneſs, evacuations will be ſerviceable. Moreover, meat and drink haſtily ſwallowed, frequently cauſes a hiccup, by irritating the interior ſurface of the æſophagus: acrid ſubſtances have the ſame effect. But the moſt troubleſome hiccup ariſes from aphthæ invading the æſophagus, which the phyſician frequently knows to be there, by the hiccup which attends, even before they appear in the fauces, or internal parts of the mouth. When the aphthæ fall off, a moſt painful hiccup follows, almoſt from every thing that is ſwallowed, and frequently even from the ſaliva itſelf; but the oil of ſweet almonds freſh drawn, and gradually ſwallowed, is the only remedy, as it eaſes and defends the excoriated æſophagus.

Of Weakness in Fevers.

APH. DCLX.

GREAT weakneſs ariſes from an obſtructed influx of the nervous fluid into the muſcles.

We have already treated at large of weakneſs of the ſolid fibres, and alſo of the ſmaller and larger veſſels, and viſcera. But here, by a febrile weakneſs, we underſtand an impotence in exerciſing the muſcular motions, which depend upon the influence of the will, as when one ill of a fever can hardly raiſe or turn his body, or move his limbs, even although he endeavours it, and although there is no impediment from pain, &c. in the parts to be moved. See Boerhaave's Inſtit. Med. Sect. 284. 27. 1.

APH. DCLXI.

THIS obſtruction may proceed from an emptineſs of the veſſels exhauſted of their fluids, from an imperviouſneſs of the fluids, an obſtruction of the nervous tubes, or a compreſſion of them, eſpecially at their origin, in the cerebrum and cerebellum; or laſtly, from a weakneſs of the heart.

APH. DCLXII.

THE firſt cauſe of weakneſs is evident from profuſe evacuations, either previous or preſent, from the long continuance of the diſeaſe,

eaſe, from morbid or artificial loſſes of blood, ſweats, diabetes, ſalivation, or diarrhæa. From a defect in taking, retaining, digeſting, and conveying the aliments into the blood. From a paleneſs, leanneſs, a ſmall pulſe, collapſed veſſels, and flaccid muſcles.

As a weakneſs may ariſe from ſo many different cauſes, it is neceſſary to know the particular cauſe, in order to regulate the method of cure. But here we treat of weakneſs from an emptineſs of the veſſels, and a waſting of the fluids.

From the long continuance, &c.] Diſeaſes of long continuance weaken the body, leſſen the quantity of the fluids, and waſte the ſolids; but if a fever attends, there will be a much greater waſte: for very fat people often loſe half their weight in a fortnight's time by fevers. Beſides, many of the functions are injured, which ought to aſſimilate the food; hence a reſtitution of what is loſt will be either deficient or imperfect.

Morbid or artificial loſſes of blood.] For when by theſe the quantity of blood is greatly diminiſhed, there will be a deficiency of the nervous fluid, as a leſs quantity of arterial blood will be ſent into the veſſels of the encephalon; hence it is evident that weakneſs muſt follow. See Aph. 610.

Sweats.] What diſorders may ariſe from profuſe ſweats, has been in part declared at Aph. 594. N°. 2. and will be further ſhewn when we come to treat of a febrile ſweat.

Diabetes.] As this is a profuſe diſcharge of urine, it is evident that the whole fluids may be carried off, and the greateſt weakneſs follow. This kind of diabetes frequently occurs in acute inflammatory fevers, in which the liquors taken are very ſoon diſcharged by urine, very little altered, and is often of the worſt preſage.

Salivation or diarrhæa.] How much the body may be exhauſted by ſpitting, we are taught from a ſalivation raiſed by mercury. In the confluent ſmall-pox there is often a great quantity of humours diſcharged this way; and in aphthæ, when the aphthous cruſt falls off, a great quantity of lymph is poured forth from the mouths of the dilated veſſels, whence great weakneſs enſues. We ſhall hereafter ſhew how many different liquors may be carried off from the body by a diarrhæa, at Aph. 719.

From a defect in taking, &c.] When the *ingeſta* can neither be retained nor digeſted, it is very evident that great weakneſs will follow.

Paleneſs, leanneſs, &c.] For all theſe are ſigns that the veſſels are empty, and that the weakneſs ariſes from inanition.

APH. DCLXIII.

AN immeability of the fluids from a glutinous, or inflammatory lentor, is known from the ſigns of a ſpontaneous glew, enumerated in Aph. 69 to 74.

There are two cauſes of lentor, or viſcidity, in the fluids, one from a defect of the vital motions, attended with a coldneſs, paleneſs, and a leucophlegmatick ſwelling; the other from an increaſed circulation whereby the fluids are rendered denſe, and paſs with difficulty through the ultimate extremities of the veſſels. This laſt is called an inflammatory viſcidity, and is attended with heat, and redneſs of the body. See Aph. 382 to 385, wherein the ſigns of it are more particularly enumerated.

APH. DCLXIV.

BUT the weakneſs, ariſing from an obſtruction of the veſſels, may be known from what has been ſaid in the hiſtory of obſtruction, under Aph. 107, & ſeq.

APH.. DCLXV.

THAT a preſſure of the brain and cerebellum is the cauſe of weakneſs, is known from thoſe functions being injured, which certainly depend upon their healthy ſtate; as when a delirium, ſleepineſs, trembling, vertigo, and a ringing in the ears, are preſent at the ſame time.

It ſeldom happens that the vital powers are weakened by a compreſſure of the cerebellum, as it has no cavity wherein the humours might be collected ſo as to compreſs that only; and then the fourth ventricle, which lies under the cerebellum, cannot be ſo filled as to compreſs the cerebellum without compreſſing the medulla oblongata, which contains the medullary fibres both of the brain and cerebellum; and, therefore, in this caſe the functions of the brain would be diſturbed, as the ſubſtance of the brain is leſs firm than the cerebellum. But that preſſure which ariſes from a diſtention of the blood-veſſels, muſt act equally, if not more upon the brain, as it ſeems impoſſible for diſtended veſſels to affect that part of the encephalon which ſerves to the voluntary motions of the muſcles, without affecting the reſt, upon which the other functions of the brain depend; and there the ſigns of this weakneſs are beſt known from the injured functions of the brain. If, therefore, there are none of the ſigns of too great evacu-

ations enumerated in Aph. 662, we know that the diſorders mentioned in Aph. 661, proceed from a compreſſure of the encephalon.

APH. DCLXVI.

BUT that which ariſes from a weakneſs of the heart is known from the ſigns of a deficient circulation. See Aph. 106.

APH. DCLXVII.

LIQUID food, coming near to the nature of the blood, digeſted by art, gelatinous and ſoft, prepared either from animal or vegetable ſubſtances, and mixed according to art with wine and ſpices, given often and in ſmall quantities at a time, with gentle frictions of the extremities, will fill the exhauſted veſſels; and more eſpecially if they are prepared of ſuch things as are contrary to the nature of the diſeaſe.

We come now to treat of the cure of different kinds of weakneſs, beginning with that ariſing from an emptineſs of the veſſels exhauſted of their fluids. Hippocrates ſays, that diſeaſes from fulneſs may be cured by evacuation, and thoſe from evacuation by repletion *. But the difficulty lies in the reſtitution of the ſame matter which has been diſcharged from the body: for we may fill weak bodies with food and drink, but, to reſtore the loſt ſubſtance, they ought to be changed by the powers of the body into healthy humours. But in this kind of weakneſs there is both a want of healthy humours, and force in the veſſels and viſcera to aſſimilate the aliments into good chyle.

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The food ſhould be, therefore, liquid, becauſe it is more eaſily converted into chyle;—it ſhould alſo contain a great deal of the ſame matter which comes near to the nature of the loſt ſubſtance, and may be eaſily ſubdued by the languid powers. Broths of beef, veal, mutton and poultry, are here proper, but not made very ſtrong and thick; the fat ſhould be carefully taken off, and a little ſalt or citron juice ſhould be added, partly for the agreeableneſs of the taſte, and partly to prevent putrefaction, to which broths ſpontaneouſly incline. The like liquid nouriſhment may be alſo prepared from milk, decoctions of bread, the white of eggs, &c. Nor will it be injurious to add a ſmall quantity of wine and mild ſpices to raiſe the languid powers. But, in profuſe hæmorrhages, where there is reaſon to fear a return, it is better to abſtain from all ſtimulants, and give fleſh broths only, as in women who miſcarry. In the other evacuations, as ſweats, diarrhæa, &c. the uſe of wine and aromatics is ſafer, but given in ſuch a quantity as not to be injurious by their ſtimulus; for we here treat of weakneſs as a febrile ſymptom.

But as the action of the veſſels is deficient in weak people, frictions of the extremities happily ſupply this defect; but, after profuſe hæmorrhages, theſe are not to be uſed, unleſs we are certain that the ruptured veſſels are ſo far cloſed that there is no danger of their opening again. By theſe means the exhauſted body may be filled; but it is to be remarked, that the nouriſhment ought to be of a contrary nature to that of the diſeaſe. Thus, if a perſon in an ardent fever is ſeized with a profuſe bleeding at the noſe, decoctions of bread, with the juice of citron, oranges, Rheniſh wine, and ſuch like, will ſupply matter for filling the body. On the contrary, if a woman, naturally weak, has loſt a great quantity of blood by abortion, fleſh broths are preferable to all other nouriſhment.

APH. DCLXVIII.

IF the weakneſs proceeds from an impervi-ouſneſs of the fluids, thoſe remedies are to be uſed which we have mentioned at Aph. 75 and 132 to 137; for nothing elſe can cure this kind of weakneſs.

There are two kinds of viſcidity in our fluids by which they are rendered impervious; the one, cold and mucous; the other, hot and inflammatory. The cold viſcidity is reſolved and attenuated by the means directed at Aph. 75; the inflammatory by thoſe mentioned in the cure of obſtruction at Aph. 132, & ſeq. and for removing an inflammation at Aph. 398.

APH. DCLXIX.

A Weakneſs, ariſing from an obſtruction of the veſſels, is to be cured in the manner directed in the hiſtory of obſtruction from Aph. 124 to 144.

APH. DCLXX.

BUT the weakneſs which ariſes from a com-preſſure of the encephalon (665), is, for the moſt part removed by ſuch applications to the part as may remove the obſtructing matter, and divert the impetus to other parts. This is done by moiſtening the noſtrils, head, face, mouth, and neck, with emollient fomentations, and by applying bliſters to the feet.

In what manner the impetus of the humours may be drawn from any part of the body to another, has been

been explained at Aph. 396, N°. iv. where we alſo ſpoke of the efficacy of bliſters, and other remedies in making revulſion.

APH. DCLXXI.

THAT which ariſes from a weakneſs in the heart is ſeldom removed, but ſlowly; yet the general methods of removing weakneſs mentioned in Aph. 667 to 671, may be here ſerviceable.

If the weakneſs of the heart ariſes from a cauſe not reſiding in itſelf, as when the heart, as well as the whole body, languiſh after profuſe evacuations; or, if the cauſe, being lodged near the cerebellum, compreſſes the cardiac nerves at their origin, then the remedies recommended in the above aphoriſms cited in the text, will be here equally ſerviceable. But, when the cauſe reſides in the heart itſelf, how ſhall we diſtinguiſh it? It will certainly be very difficult; and although we ſhould diſcover it, what curative indication can be found where the heart itſelf is only deficient? When the muſcular fibres of the heart have once loſt their due ſtrength, they will not ſufficiently reſiſt the diſtending blood, whence they will be more ſtretched, and thus the weakneſs, once formed, will be continually increaſing. A weak heart can, therefore, rarely be cured, ſince it never ceaſes to labour: the only hope is, that by a gentle circulation, ſuch as may ſuffice to continue life, the weak fibres may recover their ſtrength gradually by being diſtended with a leſs force. Cordials are of no ſervice here, as they irritate and excite the heart into more frequent contractions; and, when they are given to ſtrengthen, we ſuppoſe the heart to be in its natural ſtate.

APH. DCLXXII.

FROM what has been ſaid on weakneſs in fevers it appears to us that few underſtand the uſe of cordials in acute diſeaſes, and how it happens that weakneſs in fevers is often an inſuperable evil.

No remedy can be abſolutely termed a cordial in fevers, as the uſe of it depends upon the knowledge of the various cauſes of the weakneſs. In the beginning of acute diſeaſes it may ſuddenly ariſe from too great a quantity or rarefaction of the blood, or from an imperviouſneſs of it through the veſſels; in this caſe, ſuch things as leſſen the quantity or impetus of the blood, are truly cordials. Hence veneſection often recovers the ſtrength in the beginning, when it would be very injurious in the end of the diſeaſe; and, on the other hand, ſuch things as by a gentle ſtimulus increaſe the languid motion of the humours, would, nevertheleſs, increaſe the weakneſs which attends in the beginning of theſe diſeaſes. Thoſe things which, by filling the body exhauſted by profuſe evacuations, might be uſeful, would be injurious, if no ſuch loſs of the fluids had preceded. Even after ſuch acute diſeaſes as violently attack the head, the remaining weakneſs, though the force of the diſeaſe is already over, will not yield to ſtimulating cordials, but can only be cured by time, as we have already obſerved. For theſe reaſons great attention is required rightly to determine in acute diſeaſes, when cordials are uſeful, and what kinds are neceſſary.

That weakneſs in fevers is often an, &c.] Namely, if the cauſe of the weakneſs cannot be removed, which frequently happens; as colliquative ſweats in a confirmed phthiſis, a diarrhæa towards the end of the

the ſame, and profuſe evacuations which cannot be reſtrained: here all cordials are in vain adminiſtered. If an artery burſt by the violence of a fever, pours out its blood into the ventricles of the brain, and compreſſes the adjacent parts, the uſe of medicine is to no purpoſe. That this may happen is evident, as the arteries in the membranes of the noſe, which are much ſtronger than in the brain, are often burſt, and ſo are the veſſels in the lungs and kidnies, as appears from medical obſervations, hence a fatal hæmoptoe, or bloody urine.

Of Heat in Fevers.

APH. DCLXXIII.

THE external heat in fevers is known by the thermometer, the internal by the ſenſation of the patient, and redneſs of the urine.

In this aphoriſm we conſider how the febrile heat may be known, which though it may be perceived by the touch, yet one cannot thereby exactly diſtinguiſh its various degrees of intenſity. Therefore, the moſt certain method of meaſuring the febrile heat is by the thermometer held in the hand, or the bulb put into the mouth, or applied to the naked breaſt, or put under the arm-pit for a few minutes. But this only ſhews the external heat in the ſurface of the body, or internal parts of the mouth, which, having a free communication with the external air, are, therefore, always leſs hot than the internal parts of the body. And ſometimes the external parts of the body are not hot, while the internal are burnt up, as in ardent fevers, wherein the patient feels an intolerable burning about the vital viſcera.

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The other ſign of internal heat is the redneſs of the urine. It is demonſtrated in our chemiſtry and inſtitutes that the colour of the urine proceeds intirely from its oil.

APH. DCXXLIV.

BUT this febrile heat always requires a greater quantity of fire in the part which it heats the moſt.

Thus, when a phlegmon ſeizes the hand, there is a burning heat perceived in that part, much greater than in the other parts of the body, as manifeſtly appears from the thermometer. For, in the worſt kind of ardent fevers in which there is a coldneſs in the extremities, but a burning heat about the præcordia, if the thermometer be firſt applied to the extremities, and then to the naked breaſt, it will exhibit to the eye the difference in the quantity of fire contained in thoſe parts. It now remains to inquire what the cauſe is by which a greater quantity of fire may be collected in the body of a febrile patient, either throughout the whole, or ſome particular part,

APH. DCLXXV.

THIS greater quantity of fire ariſes from a more violent attrition of the fluid parts againſt each other, againſt the veſſels, and of the veſſels againſt the fluids.

As heat attends the motion of the humours through the veſſels, and is deſtroyed when that motion ceaſes, one may thence conclude this motion to be the cauſe which produces heat: and in this we are the more confirmed, becauſe the motion of the humours

mours being increaſed, the heat is alſo increaſed, and e contra. That fire is produced from the attrition of ſolid bodies is proved from experiments: but it likewiſe appears, that oil, water, or any other liquor interpoſed between the bodies to be rubbed, there will hardly any heat ariſe, even from a violent attrition. From hence ſome phyſicians of great fame have doubted, whether heat is to be aſcribed to this cauſe in the blood, and rather think that it grows hot from ſome other cauſe, though they allow that the blood is heated by motion.

But heat is not raiſed by every kind of motion in bodies, but only by ſuch as mutually act upon each other, more eſpecially if they are elaſtic; but, if they are not, it will be difficult to produce heat. Hence water ſo difficultly grows hot by attrition. Yet milk grows warm by agitation when butter is made of it. But fluids, not elaſtic, urged with a great force through very ſmall veſſels, will grow warm by attrition, and much more if the tubes through which they are drove are elaſtic. See H. Boer. Elem. Chem. tom. 1. pag. 197. Beſides, it appears from the obſervations of Leeuwenhoeck and others, that the blood is compoſed of elaſtic particles, and moved through elaſtic canals.

All this is fairly confirmed by the appearances obſervable in diſeaſes, when the fluids or ſolids or both degenerate from their healthy conditions. For when the red blood is exhauſted by profuſe hæmorrhages, the heat of the body decreaſes. When the native heat is diminiſhed in thoſe, who, inſtead of firm blood, have their veſſels filled with inactive water, as in girls afflicted with the green ſickneſs; and likewiſe in thoſe who have weak ſolids, there is a leſs action of them upon their contained fluids, and, conſequently, a leſs attrition. For the red part of the blood, conſiſting of the largeſt globules contained in our humours, and moved through the largeſt veſſels, are beſt diſpoſed to produce heat by attrition, and to retain it when it is raiſed. For the more denſe,

and

and the more ſpherical a body is, ſo much the more it is diſpoſed to retain fire or heat a longer time in itſelf. But all theſe properties reſide chiefly in the red particles of the blood, if compared with the other conſtituent parts or elements of our humours. For this reaſon the veſſels full of red blood are placed in thoſe parts where the thineſt humours pervade the ſmalleſt veſſels to ſupply the deficiency of heat in the latter. As therefore the natural heat depends upon the mutual attrition of the particles of the fluids againſt each other, and againſt the ſides of the veſſels, heat in fevers is juſtly aſcribed to the ſame cauſes. We ſhall next inquire whence this increaſe ariſes.

APH. DCLXXVI.

BUT this violent attrition ariſes from a greater motion of the particles of the fluids ſent from the heart, and a great reſiſtance of the veſſels againſt the heart.

APH. DCLXXVII.

THE great motion of the blood, propelled from the heart, is eſtimated from the denſity of the fluid, and its velocity through the veſſels. The truth of theſe two aphoriſms is demonſtrated in phyſics.

APH. DCLXXVIII.

THE denſity of the blood is known from the appearance of it out of the veſſels, from a previous diſſipation of its thinner parts, and from the hardneſs of the pulſe.

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The ſtronger the action of the veſſels is upon the fluids, the more denſe the blood. For this reaſon robuſt and hard labouring men have their blood more ſolid and denſe than the weak and idle; hence we may foreſee the denſity of the blood from a known habit of body. If the more thin and fluid parts of our humours are carried off by urine, ſweats, a diarrhæa, &c. then the remaining blood muſt of neceſſity become more denſe. The hardneſs of the pulſe is alſo a ſign of the denſity of the blood; for it then violently reſiſts the preſſure of the finger.

APH. DCLXXIX.

THE velocity of the blood is computed from the number of the contractions of the heart, compared with the magnitude of the pulſe.

As the artery is dilated at the time the heart is contracted, and the artery contracted when the heart is dilated, it is evident that a greater quickneſs of the pulſe denotes a more frequent action of the heart, and therefore a quick pulſe, that is alſo large, ſhews that the velocity of the blood is increaſed.

APH. DCLXXX.

A Great reſiſtance to the heart is known from the bulk of the ſluggiſh humours to be moved, and from the paucity, narrowneſs, or immobility of the veſſels through which they are to be tranſmitted.

The greater the maſs of fluid in the cavity of the arteries is, the greater reſiſtance will be made to the blood expelled from the heart into the arteries, and if their diameters are diminiſhed by any cauſe, or their

their number leſſened, it is again evident that the reſiſtance muſt increaſe; or if their ſides are ſo firm as not to yield eaſily to the blood impelled from the heart, the reſiſtance will thence again be increaſed. Hence appears the reaſon why weak people are ſo often oppreſſed with anguiſh, after a large quantity of aliment; for the maſs of humours being ſuddenly increaſed, augments the reſiſtance to the heart. But when the heart has force enough to overcome this increaſed reſiſtance, there ariſes a feveriſh heat from the great attrition after a large meal.

APH. DCLXXXI.

THAT the maſs of fluids to be moved is too bulky, is perceived by the ſigns of a plethora, (126) cacochymy, or of a ſudden ſolution of liquids, which were before ſtagnant, as in fat people; but more eſpecially by a turgeſcence of the veins, with a large and quick pulſe.

The principal ſign of too great a maſs to be moved, is a large and quick pulſe of the artery, while at the ſame time the veins are turgid; for then we know that the veſſels are extremely full. But the pulſe of the arteries may be large and quick, tho' in the mean time there is no increaſed quantity of the liquid to be moved, namely, when the blood, thickened by an inflammatory denſity, paſſes more difficultly through the extremities of the arteries; but then the veins are emptied, becauſe they received leſs, and almoſt all the blood is accumulated in the arteries. But in languid diſeaſes, the humours are often accumulated in the veins, which are more eaſily diſtended, while, in the mean time, a leſs quantity flows thro' the arteries. But when both the arteries and veins are turgid at the ſame time, we know for certain that

the maſs of humours to be moved is increaſed; but for a greater quantity of fluids to flow in the ſame time through a like number of veſſels, the celerity of the moving fluid muſt be incteaſed, and therefore there will alſo be a quickneſs of the pulſe, except there is a great plethora, by which the motion of the fluids is almoſt ſuffocated by the great maſs to be moved, whence the heat and quickneſs of the pulſe are ſcarcely obſervable; an inſtance of this kind is given us by Sydenham, in his Schedula Monetoria, pag. 683.

APH. DCLXXXII.

THE paucity of the veſſels is known from the hiſtory of obſtruction, and of wounds.

See the comment to Aph. 120, and alſo the comment to Aph. 382. N°. 8.

APH. DCLXXXIII.

A Narrowneſs of the veſſels is known by inſpection, by the touch, and the patient's dry habit, with a great increaſe of heat from a ſmall degree of motion.

In many parts of the body the veſſels are ſo conſpicuous, that we may judge by inſpection of the increaſe or diminution of capacity; for the veins, even very large ones, are placed on the ſurface of the body, and in the lips, internal parts of the mouth, white of the eye, &c. the arterial veſſels, however ſmall, are expoſed to view; but the larger arteries are more deeply for their ſecurity. We are likewiſe able to diſtinguiſh the greater or leſſer capacity of the arteries in many parts of the body by touch; eſpecially if they lie upon bones, as in the wriſts and temples.

But

But as the capacity of the veſſels is meaſured by a ratio compounded of the force of the impelled fluid directly, and of the reſiſting ſides inverſely, it is evident that the veſſels may be ſtreightened, if the impelling force is diminiſhed, or the reſiſtance increaſed. The firſt cauſe of narrowneſs is known from the ſigns of a weakneſs in the heart, the latter by thoſe which attend an increaſed elaſticity of the veſſels. But we here treat of the latter kind of narrowneſs, namely, when the contractile force of their ſides is ſo much increaſed, as to leſſen their capacity; for then a dry habit attends, which is uſually accompanied with greater heat, and always with leanneſs. Boerh. Inſt. Med. §. 892. Beſides, when the veſſels are narrow, the velocity of the circulation is increaſed, becauſe they do not ſo eaſily dilate; whence a great attrition, and conſequently an increaſe of heat.

APH. DCLXXXIV.

AN immobility of the veſſels greatly reſiſting their dilatation, is known from the ſigns of rigidity in the fibres, veſſels, and viſcera. See Aph. 32 to 34. and Aph. 50 to 54.

The immobility of the veſſels we here conſider, ariſes from a greater coheſion of the ſolid parts, of which we treated at the aphoriſms cited in the text.

APH. DCLXXXV.

FROM ſo many proximate cauſes (674 to 685,) does the origin of heat in fevers proceed; which again may proceed from an infinite number and variety of other remote cauſes.

We

We have now conſidered the proximate cauſes of heat in fevers, and diſtinguiſhed their ſeveral kinds, in order to deliver the cure of each; and it appears, that however different they are, yet they all agree in this, that they produce a more violent attrition, and conſequently a greater degree of heat. But theſe proximate cauſes again acknowledge others for their proximate cauſes, which, with reſpect to the febrile heat, are only remote cauſes. Of theſe there is a great number, and almoſt infinite variety, and therefore an enumeration of them would be of no uſe, as it is ſufficient for the cure of the febrile heat to remove the proximate cauſes of it. Thus the maſs of humours to be removed being increaſed, has been reckoned among the cauſes of heat in fevers, which again may be various, as it may ariſe from a plethora cacochymy, or ſtagnant humours put in motion. But the cure of febrile heat from this cauſe, requires only a leſſening of the maſs to be removed, without any regard to the remote cauſes of the plethora, or cacochymy. The ſame is alſo true of the denſity, velocity of the blood, &c. As heat in healthy people ariſes from attrition, the increaſe of healthy heat in fevers is to be aſcribed to the ſame cauſes, only more violent. Hence heating medicines do not render the body hotter, becauſe they contain more heat in themſelves, but becauſe, by a powerful ſtimulus, they increaſe the motion and attrition of the humours: for the moſt fiery pepper, oil of cinnamon, and the like, examined by the thermometer, have the ſame heat with the ambient air; and though they are applied to a dead body, do not produce any heat.

APH. DCLXXXVI.

BUT the febrile heat may increaſe from an augmentation only of one of theſe cauſes, and then the increaſe of the heat will be in proportion to the augmentation of the cauſe.

The comment to this aphoriſm is more curious than uſeful, as the proportional augmentations of the particular cauſes of heat, and their effects, afford room for much diſputation; but in the general we may affirm, that heat is augmented when the particular cauſes of it are increaſed, other things continuing the ſame; and when we conſider theſe cauſes abſtractedly, a computation may be made; but in the concrete it will be extremely difficult, if not wholly impracticable. It is enough for the phyſician that he can judge of the various intenſity of the febrile heat from the ſigns enumerated at Aph. 673.

APH. DCLXXXVII.

IF again two of theſe cauſes increaſe together, the increaſed heat will be as the product of the increments of the cauſes, multiplied by each other.

APH. DCLXXXVIII.

WHICH calculation may alſo take place in the reſt of the cauſes.

For if ſeveral cauſes increaſe together, the heat will doubtleſs be increaſed; but it will be very difficult to know in what proportion the increaſe is made.

APH. DCLXXXIX.

AN increaſed heat diſſipates the moſt fluid parts from our blood, that is to ſay, the moſt ſpirituous, watery, ſaline, and oily particles; it dries, condenſes, and inſpiſſates the remaining maſs into an impervious, irreſolvable matter;

matter; it ſets at liberty the ſalts and oils, attenuates and renders them more acrid, and alſo exhales and puts them in motion; hence it wears away and breaks the ſmalleſt veſſels, dries up the fibres, and renders them rigid and contracted; and hence of a ſudden it produces many quick, dangerous, and fatal diſeaſes, which are eaſily deducible from an increaſed heat as the cauſe.

We come now to treat of the effects of an increaſed heat both in the ſolid and fluid parts of the body, which, if duly conſidered, the reaſon will evidently appear why it may produce many and ſuddenly fatal diſeaſes: for the integrity of all the functions depends on a free motion of the humours through the veſſels; but by an increaſed heat thoſe motions are diſturbed, or intirely aboliſhed, whether this happens from a rupture of the ſmaller veſſels, or from a diſtention of the larger by impervious matter, and compreſſing the ſmaller. When theſe injuries happen in thoſe parts upon which life more immediately depends, ſpeedy death enſues; and moſt ſuddenly, when the ſerum of the blood begins to coagulate by the immenſe degree of heat: for in a little time it will heſitate impervious in the ſmalleſt veſſels of the lungs, whence a moſt acute and fatal peripneumony. The ſame thing will happen if the fabric of the cerebellum is either deſtroyed, or ſo ſtuffed up as to hinder the influx of the vital ſpirits to the heart. It is therefore evident with how much care one ought to attend to this febrile ſymptom, in order to prevent theſe fatal events. How this is done, we are now to ſhew,

APH. DCXC.

FROM what has been ſaid, we may at length be able to underſtand what it required to mitigate heat, and what various remedies contribute thereto.

APH. DCXCI.

IF an increaſed velocity only occaſions heat, the remedy will be every thing that leſſens it, ſuch as reſt of the muſcles, and quiet of mind, blood-letting, a gentle and ſhort compreſſure of the veins in the limbs; the application of things moderately cool, both internally and externally, together with a prudent uſe of diacodiates.

Reſt of the muſcles, &c.] For when theſe move, they ſwell and compreſs the adjacent veins, and by that means accelerate the motion of the venal blood towards the heart. See what has been ſaid of paſſions of the mind in the comment to Aph. 99, 104, 605, N°. 5.

Blood-letting.] The increaſed velocity of the blood, and bad conſequences of it, are by no means ſooner relieved and prevented than by blood-letting. See the comment to Aph. 610.

A gentle and ſhort compreſſure of, &c.] For by this means the return of the blood to the heart is retarded, and the contractions of the heart leſſened; but this compreſſure by bandages or ligatures ought only to be gentle, ſo as to leſſen the diameter of the larger venal trunks, but not intirely to compreſs them.

The

The application of things which moderately cool, &c.] Great caution is neceſſary here; for the denſity of the blood and conſtriction of the veſſels is often increaſed by the indiſcreet application of cold things, and therefore the cauſes producing heat are alſo increaſed. See the comment to Aph. 640. N°. 1.

Diacodiates.] When the above means are tried, and the too great velocity of the blood ſtill continues, then theſe medicines are often ſerviceable, as Sydenham has obſerved, eſpecially towards the declenſion of the diſeaſe. See more relating to this in Aph. 609.

APH. DCXCII.

IF the febrile heat ariſes from too great denſity of the blood, it is cured by ſuch things as diminiſh its velocity, (691.) by drinking water with oxymel, and by ſuch means as relax the veſſels.

Whatever increaſes the velocity of the blood, increaſes alſo the condenſing cauſes, ſo that this velocity muſt be leſſened, in order to remove the preſent, and prevent the future too great denſity of the blood. Add to this, that the moſt fluid parts of the blood are diſſipated by an increaſed velocity, and conſequently the remaining part inſpiſſated: but the moſt fluid and moveable part of our blood conſiſting almoſt intirely of water, it will be one of the beſt remedies to reſtore what has been loſt, eſpecially when ſuch things are added to it which cool and reſiſt putrefaction. Hence oxymel was in great eſteem, and highly recommended by the ancients in the cure of acute diſeaſes. See the comment to Aph 398, where we treated of thoſe remedies by which the obſtructing matter might be rendered fluid. Decoctions of barley or oats with oxymel, emulſions of the mealy ſeeds, decoctions of mallows, marſh-mallows, and

the like, anſwer all theſe intentions; for they dilute by their water, attenuate and reſiſt putrefaction by the addition of oxymel, and at the ſame time relax the veſſels by their ſoft glutinoſity. But the alcaline ſalts, both fixed and volatile, ſhould not be uſed here, as they hurt by their ſtimulus, and incline the humours to an alcaline nature.

APH. DCXCIII.

THE too great maſs to be moved in a mere plethora is eaſily leſſened (106. N°. 6.) but in a cacochymy it is to be removed ſlowly, by repeating evacuations at intervals, and by correcting the humours at the ſame time. But when the fat is diſſolved and put into motion, which was before ſtagnated, there is the greateſt difficulty: here watery drinks, with acids, honey, the yelks of eggs, and ſugar are of the greateſt uſe, together with evacuating medicines conſtantly uſed.

Too great a quantity of good blood is eaſily removed by veneſection; but if a redundant cacochymy increaſes the maſs to be moved, we cannot remove it at once, as in a plethora. For although we bleed largely in this caſe, the morbid humours are ſtill left in the veſſels, while the good blood is diminiſhed by the evacuation, which is always deficient in a cacochymy, notwithſtanding there is too great a maſs of humours to be moved. But the great difficulty is, when the cacochymy is joined with great acrimony, as in a bad ſcurvy, or when the atrabilis is diſſolved and put in motion; for there is great reaſon to fear, that the veſſels diſtended by acrid humours moved by the fever, may be ruptured; and as the whole maſs is tainted with the ſame acrimony, how much ſoever you leſſen the maſs by evacuation, yet

yet the ſame malignity remains, and may, by its ſtimulus, continually increaſe the circulation; hence the moſt acute fevers are often excited, as we ſhall ſee hereafter, when we treat of the ſcurvy and atrabiliary melancholy.

But the maſs of humours is never more ſuddenly, or more dangerouſly increaſed, than when the fat is diſſolved by an acute fever in corpulent men, and mixed with the blood. This fat being diſſolved, enters the veins, and mixes with the blood, and therefore we cannot, even by profuſe bleeding, evacuate ſo much of it as is daily diſſolved, and mixed with the circulating humours. Hence all the effects of a plethora are renewed every day. Moreover, when the blood is loaded with ſo great a quantity of diſſolved fat, the worſt inflammations are to be feared; becauſe this oil paſſes with difficulty through the ſmalleſt veſſels, and hinders the paſſage of other humours. If we alſo conſider that this oil inclines to a rancid acrimony from an increaſed heat, it will readily appear what diſorders are to appear from it.

The curative indication is to remove the fat as much and as ſoon as poſſible. But in this caſe we find the urine very red, frothy, and ſaponaceous, the ſweats of a ſtrong ſmell, and almoſt greaſy. Here plenty of watery drinks, to afford a vehicle for the urine and ſweat, will be proper; but ſince by urine only ſuch a quantity of the oil can be diſcharged as is mixed with the ſalts of the blood, it will be convenient to give, with watery liquors, ſuch things as render water and oil miſcible. Sugar and honey have this power, being a kind of native ſoaps. The yelks of eggs will do the ſame; but we muſt uſe them more ſparing, becauſe they are eaſily changed into the worſt kind of putrefaction; or if they are uſed, they ſhould be corrected by acids. But ſugar and honey, or medicines prepared of them, may be given in great quantities, even to a pound and upwards, in a night and a day, if they are plentifully diluted

with water, and the addition of acids. The ſyrup of violets, juice of citrons, elder-berries, currants, ſimple oxymel, and the like, are of the greateſt uſe here, when the fat, diſſolved by an acute fever, occaſions this oily plethora.

But as this fulneſs ought to be leſſened, evacuations are required at the ſame time, either by bleeding when the veſſels are over-diſtended, or by purging. Cream and cryſtals of tartar, ſal polychreſt, nitre, tamarinds, manna, rhubarb, &c. which by a gentle ſtimulus ſollicit the humours towards the inteſtines, are chiefly uſed for this intention. Whey made of ſkimmed milk, drank in great quantities, is alſo very uſeful, and by this life may be ſupported without any other food.

APH. DCXCIV.

AN obſtruction of the veſſels creating heat (682.) may be underſtood from the cure of obſtruction, and from the cure of thoſe diſorders which follow the loſs of the veſſels in wounds.

When by wounds, eſpecially in amputations, a great number of veſſels are deſtroyed, it is out of the power of art to ſupply that defect. Nothing remains but to leſſen the quantity of the circulating fluid, in order to leſſen the reſiſtance and too great fulneſs of the remaining veſſels; concerning which, ſee what has been ſaid at Aph. 474.

APH. DCXCV.

IF the heat proceeds from a narrowneſs of the veſſels (683.) they muſt be dilated by relaxing remedies (54.)

As

As the capacity of the veſſels depends on two cauſes mutually oppoſing each other, namely, the impulſe of the fluid, and the reſiſtance of the veſſels, the two narrow veſſels may be dilated by increaſing the force of the impelled, or by leſſening the reſiſtance of their ſides. But if the impulſe of the fluid is increaſed, the heat will likewiſe increaſe, and therefore nothing remains but to leſſen the reſiſtance of the ſides. This is obtained by relaxing and emollient remedies, and eſpecially by a vapour-bath, by which the moſt ſolid parts of animals are ſoftened. By the ſame means, the too great dryneſs, which uſually attends a narrowneſs of the veſſels, may be corrected.

APH. DCXCVI.

BY the ſame means alſo, the heat ariſing from too great rigidity of the veſſels is removed.

See what has been ſaid concerning the cure of rigidity of the veſſels at Aph. 54.

APH. DCXCVII.

BUT whenever the exceſs of heat ariſes from a conjunction of ſeveral cauſes, then the remedies deſcribed from Aph. 690 to 697, will, combined together, be the moſt effectual.

Hitherto we have conſidered the cure of febrile heat produced from ſingle cauſes; but as ſeveral of theſe cauſes may concur at the ſame time (687.) ſuch remedies are required as are proper to remove the diſcovered cauſes of the heat; and frequently one method of cure ſerves to ſubdue ſeveral cauſes of febrile heat. For example, veneſection leſſens the velocity, and

and denſity of the blood, and the quantity of the maſs to be moved, and the cure of obſtruction is a capital remedy.

APH. DCXCVIII.

FROM all this doctrine of heat we may underſtand, why the hotteſt fever is acute, quick in its progreſs and putrid, and with the greateſt degree of heat peſtiferous. Why the heat of the bed, confined air, hot regimen and medicines are ſo pernicious. Why a burning heat about the heart and hypochondria is ſo bad. Heat diſpoſes to putrefaction, but putrefaction of itſelf does not produce heat in fevers.

Why the heat of the bed, confined air, &c.] The human body is always hotter than the ambient air, and therefore the heat of the body is diminiſhed, when the air has free acceſs to it. A patient burning with heat, and covered with bed-cloaths, has the air excluded on all ſides; and therefore the whole body is retained in a hot atmoſphere of vapours, exhaling from his own ſkin, and conſequently the heat will be increaſed. Beſides, in many fevers, that which exhales from the patient is often ſo malignant, as to diſorder the bye-ſtanders: what muſt it then be to the ſick? See Aph. 610, 611.

Why a burning heat about the heart, &c.] Becauſe the heat of the body is ſo uniform in health, that every part is cheriſhed almoſt with the ſame degree of heat. Hence Hippocrates eſteems it one of the beſt ſigns in diſeaſes, when the whole body is equally warm and ſoft: for then we know that the veſſels are pervious; and for the ſame reaſon he makes the increaſed heat in any part of the body a ſign that the diſeaſe there fixes its ſeat.

Heat

Heat about the hypochondria is alſo a bad preſage; for there the liver and ſpleen are ſeated, ſuch tender viſcera, that there is danger of a rupture in their veſſels from the attrition raiſed by an increaſed heat. The ancient phyſicians diligently obſerved the hypochondria in diſeaſes, and always ſuſpected ſomething bad when they perceived a greater heat there than in the reſt of the body.

Heat diſpoſes to putrefaction, but, &c.] Many phyſicians have aſcribed the cauſe of heat in fevers to a putrefaction of the humours; but I believe it will appear to every one who conſiders, that putrefaction is rather the effect of heat, and not the cauſe; and that it does not excite heat by its own proper force, but only as it increaſes the celerity of the humours through the veſſels, and conſequently their attrition, from which heat is generated. That heat putrefies, we ſaid before, in the comment to Aph. 84. N°. 5. and at Aph. 100. Indeed putrefaction never happens without a conſiderable heat. See Boerh. Chem. tom. ii. pag. 291. Moiſt vegetables laid in a heap to putrefy, raiſe a great heat; but when they are once converted into a putrid liquid, they then return to the temperature of the ambient air. It is therefore evident that heat is both preſent and neceſſary in putrefaction; but when it is once accompliſhed, it does not of itſelf produce heat. Putrefaction then is unjuſtly reckoned a proximate cauſe of increaſed heat, of which it is rather the effect; for great heat in fevers is obſerved before any ſigns of putrefaction appear. But if putrefaction produced heat of itſelf, the heat of a ſphacelated part would be greater than that of the reſt of the body.

APH.

APH. DCXCIX.

FROM what has been ſaid, the origin, nature, and effects of dryneſs may be likewiſe plainly perceived, and the cure thence directed; which conſiſts in drinks, fomentations, baths, glyſters, and gargles, made of watery, ſubacid, and relaxing ingredients, with honey.

This aphoriſm is ſufficiently explained by what has been already ſaid of dryneſs and its effects; but conſult Aph. 609. N°. 2. and Aph. 689.

Of a DELIRIUM in FEVRS.

APH. DCC.

A Delirium is a production of ideas not anſwering to external cauſes, but to the internal diſpoſition of the brain, attended with a wrong judgment following from thoſe ideas, and an affection of the mind, and motion of the body correſponding therewith; and from theſe increaſed by degrees, either alone or combined, various kinds of deliria are produced.

APH. DCCI.

A Delirium therefore always ſuppoſes a morbid affection of the medullary part of the brain, which may ariſe from any kind of obſtruction; from an impediment to the influx, tranſflux, and efflux of the fluids through the brain;

brain; from too great a velocity, or ſtagnation of the humours, and from many other cauſes, which, to find out, the phyſician muſt uſe all his ſagacity in order to direct the method of cure.

As it is evident from anatomical injections that the fabric of the brain is vaſcular, it is probable that it may be affected with all thoſe diſorders which happen to the larger veſſels. Hence obſtruction may take place, namely, when theſe very tender veſſels are ſtraitened by ſome external compreſſing cauſe. For whatever impedes the influx, transflux, and efflux of the fluids through the brain, may alſo produce a delirium, becauſe it diſturbs the ſecretion and motion of the ſpirits through the nerves and medulla of the brain itſelf. We ſee beſides, that in the other viſcera a certain determinate impetus is required to move the humours through the veſſels conſtituting their ſubſtance, and that the functions of thoſe viſcera are diſturbed, either from their too rapid, or too ſlow motion; and therefore the ſame will happen to the brain. Perhaps many are delirious in the height of an intermitting fever, only from too great a velocity; and therefore the delirium ceaſes, when the velocity leſſens towards the decline of the fit. All the cauſes of obſtruction and inflammation, with their conſequences, may here take place; and every thing capable of accelerating or retarding the circulation may likewiſe produce a delirium; ſo that this diſorder may ariſe from many cauſes.

All the cauſes hitherto mentioned producing a delirium are ſeated in the brain itſelf.—But the common ſenſory may be ſo affected from the diſorders of other parts of the body, as if the phyſical cauſe preexiſted in the brain itſelf, though at the ſame time the cauſe of the diſorder lies in different parts. This

is

is of great moment in practice, and deſerves a ſerious conſideration.

The ancient phyſicians have remarked the ſigns of a future delirium from the changes obſerved in other parts of the body. Hippocrates ſays, "That "a beating in the hypochondria preſages either a "delirium, or a diſturbance; that palpitations about "the belly in fevers cauſe emotions of the mind." And Galen affirms, "That epilepſies, cari, comata, "deliria, &c. ariſe from a weak ſtomach, by its "conſent with the brain and nerves." But although the common ſenſory (as appears from wounds) may be diſturbed from injuries in various parts, and ſome of them very remote; yet a delirium, conſidered as a febrile ſymptom, frequently happens when the cauſe of it is ſeated about the præcordia, and when that is removed, the delirium ceaſes, though no remedies at all be applied to the head.

The præcordia include the cardia, hypochondria, and the epigaſtrium. We learn from obſervation, that foul humours lodged about the præcordia may diſturb all the actions of the brain, and produce deliria, ravings, and other ſymptoms of dangerous conſequence; but by giving a vomit, to diſcharge theſe corrupt humours, we frequently ſee all theſe diſturbances immediately ceaſe. That foul humours are collected about the præcordia, we know from the following ſigns, a foul tongue, a bitter diſagreeable taſte in the mouth, a nauſea, vomiting, and oppreſſion or anguiſh; and this diagnoſis is the more certain, if there be no other ſigns that ſhew the delirium to ariſe from other cauſes.

APH. DCCII.

FOR, the method of cure, and the different remedies are to be choſen ſuitable to the different cauſes (701.) but the chief of theſe are

are pedeluvia, bliſters applied to the feet and legs, frictions of theſe parts, diluting glyſters frequently injected, thin diet, ſoft, quieting, deobſtruent, and diluting drinks; emollient applications to the head, emetics ſometimes, cathartics, gentle anodynes, bleeding in the feet, and bringing down the hæmorrhoidal or menſtrual diſcharge.

As a delirium may ariſe from very different cauſes, it is evident that no univerſal method of cure can be delivered; but that different remedies are required, according to the variety of the cauſes. For a delirium ariſing from an inflammatory tentor, requires a very different method of cure from one ariſing from weakneſs. But a delirium conſidered as a febrile ſymptom, is generally attended with a great velocity of the circulation; whatever therefore diminiſh the quantity of the humours, or divert their impetus towards other parts, and act by weakening or removing the ſtimulus, and by diluting or attenuating the humours, render them pervious, are here the chief remedies; ſuch are,

Pedeluvia, bliſters applied to, &c.] For all theſe derive the impetus and quantity of the blood towards the extremities, and conſequently divert it from the head.

Glyſters frequently injected.] For thus the fæces are waſhed, the veſſels of the inteſtines relaxed and fomented, and the impulſe of the humours diverted from the head, while by theſe paſſages diluents are conveyed into the blood with advantage. If the delirium is violent, diluent glyſters ought to be injected every three hours, till the diſorder abates; but in the decline of the fever they muſt not be too often given, for fear of reducing the patient's ſtrength.

Thin diet.] That is, ſuch as can neither increaſe the reſiſtance or ſtimulus of the humours, as thoſe drinks and diet directed at Aph. 599.

Soft,

Soft, quieting, &c.] Theſe may be made of the ſame ingredients directed at Aph, 599. Sydenham gave ſpirit of vitriol in ſmall beer as common drink.

Emollient applications to the head.] To diminiſh the reſiſtance in the veſſels diſtributed to theſe parts, which ariſe from the external carotids. For the blood drove through theſe arteries, will preſs with a leſs force againſt the internal trunks, as it meets with leſs reſiſtance in the external carotids.

Emetics ſometimes.] Only when corrupt bile, or other foul humours, are lodged about the præcordia, the ſigns of which are enumerated at Aph. 701.

Cathartics.] Theſe may be uſeful, 1. As they carry off the offending humours lodged about the præcordia. 2. As they leſſen the impetus of the arterial blood, and leſſen the quantity of the fluids diſtending the veſſels. See Aph. 396. But the milder purges are here the beſt, as tamarinds, cream of tartar, ſenna, rhubarb, and the like.

Gentle anodynes.] Such as the ſyrup and diſtilled water of wild red poppy-flowers; for the ſtronger narcotics are pernicious, unleſs the diſorder has continued a long time.

Bleeding in the foot, &c.] How beneficial ſpontaneous hæmorrhages are in acute diſeaſes, will be ſhewn hereafter. But the bringing down of the piles has always been ſerviceable in diſeaſes of the head: and no wonder, as the hæmorrhoidal veſſels and carotid arteries convey the blood in oppoſite directions; whence a great revulſion may be reaſonably expected. But it is not always in the power of art to bring down theſe ſpontaneous evacuations at pleaſure; all the phyſician has to do is, to open and lubricate the paſſages, by which nature endeavours to make theſe evacuations. Thus, if he knows that the patient was before ſubject to the piles, and that there is pain, redneſs, and an itching about the anus, with a teneſmus, then he may be ſure that ſomething of this nature is to be expected, and therefore theſe parts

parts are to be continually fomented, ſoft cataplaſms applied, and glyſters of the like kind injected: and if theſe do not bring down the piles, the parts may be irritated with ſuppoſitories of ſal gem, aloes, &c. boiled in honey; but the moſt frequent practice is to apply leeches to the anus.

For the ſame reaſon it is uſeful to provoke the menſes in women; but this ſhould be done by relaxing and mollifying remedies, and not by emmenagogæ, which moſtly increaſe the impetus and velocity of the blood. Pediluvia, epiſpaſtics, and frictions of the lower parts, are alſo of great uſe; and all theſe means moſt happily ſucceed, when the uſual time of this periodical diſcharge is at hand. If by theſe attempts the menſes do not follow, a vein may be opened in the foot, after which they commonly break forth: but all theſe evacuations are only uſeful, when the veſſels are diſtended with too great a quantity of blood, or when the circulation is too violent, and a revulſion of the humours neceſſary. In the end of acute diſeaſes, when the ſtrength is exhauſted, theſe evacuations are hurtful, even though the delirium ſtill continues; and an imprudent uſe of them is frequently attended afterwards with an incurable fooliſhneſs; but a weak pulſe, ſlight heat, and a collapſion of the veſſels, ſhew that evacuations are not wanted.

But beſides theſe, there are ſtill other methods of curing a delirium, by which that diſpoſition of the brain from whence it proceeds is either leſſened, or quite changed by raiſing other ideas. Something of this nature was obſerved by Celſus, who ſays, "Sometimes alſo the attention is to be engaged, a method taken with ſtudious men, to whom a book is read, either properly, if they be pleaſed with it, or improperly, if it offends them; for by correcting they begin to give their attention." Lib. iii. cap. 18. Many things of the like kind may be tried to fix the attention of the mind in a delirium.

Of a Febrile Coma.

APH. DCCIII.

A Coma, or dozing in fevers, is a continual inclination to ſleep, either with or without real ſleep; and always ſuppoſes ſuch a ſtate of the brain, as impedes the free exerciſe of the ſenſes, and animal motions; which may ariſe from a defect of the arterial fluid propelled to the brain, or from an obſtructed circulation of it through the brain; or from a defective ſecretion of the ſpirits from the blood into the nerves; or laſtly, from whatever may intercept their influx and reflux through the nerves.

A *coma*, ſimply taken, is uſed by Hippocrates only to denote a deep ſleep, and is oppoſed to watchings; but when there are watchings together with a *coma*, he calls it a *coma vigil*, or a coma without ſleepineſs. As a coma ſuppoſes a continual ſleepineſs, whether ſleep follows or not, this ſymptom may be beſt underſtood from what we obſerve in natural ſleep. It is demonſtrated in our theoretical lectures, that ſleep is that ſtate of the medulla of the brain, wherein the nerves do not receive ſo copious an influx of the ſpirits, as is neceſſary to render the organs of ſenſe and motion able and ready to perform their ſeveral actions. The like diſpoſition takes place in the preſent diſorder: for the ſpirits being conſumed in health by the actions of the internal and external ſenſes, and the motion of the muſcles, natural ſleep follows: ſo likewiſe a coma will happen when the ſpirits ars deficient, or when their free influx from the brain to the nerves, or from theſe to the brain, is intercepted by any cauſe.

APH.

APH. DCCIV.

HENCE a great many very different and even oppoſite cauſes often produce a coma in fevers, ſuch as all profuſe evacuations, or repletions; all inſpiſſations of the blood, whether glutinous, oily, or inflammatory; all cauſes compreſſing the brain itſelf, of what kind ſoever, which, if they act upon the nerves, may produce almoſt the ſame effects.

Profuſe evacuations.] Becauſe they diminiſh the maſs of the circulating humours, or the quantity of the arterial fluid to be ſent to the brain.

Repletions.] This we learn from a plethora, by which the cortex of the brain, the medulla and origin of the nerves are compreſſed. Hence plethoric people are ſleepy and lazy. All cauſes alſo which urge the humours in too great a quantity towards the head, as a great repletion of the ſtomach, by which the deſcending trunk of the aorta and adjacent viſcera are compreſſed. See Aph. 586. N°. 1.

All inſpiſſations, &c.] For by theſe a free circulation through the veſſels of the brain is prevented. There are two kinds of inſpiſſation obſervable in the blood, the one glutinous and inactive, known from a pale colour, and a bloated habit of body; the other inflammatory, and is uſually attended with heat, and an increaſed velocity of the circulation. But when in corpulent people the fat is diſſolved by the febrile heat, it produces an oily imperviouſneſs of the humours, and renders them more difficult to paſs through the ſmalleſt veſſels. See what has been ſaid on this ſubject in the comment to Aph. 693.

All cauſes compreſſing the brain, &c.] We made it appear, in the hiſtory of wounds of the head, that if the brain was compreſſed by an indentation of the

ſkull, or an extravaſation of the humours, the conſequences were drowſineſs, ſleepineſs, giddineſs, delirium, and an injury of all the animal functions, even to a fatal apoplexy, and that theſe ſymptoms were more or leſs violent according to the degree of preſſure. But, in a febrile coma, this preſſure of the brain generally ariſes from a diſtention of the larger veſſels, either from the quantity, impetus, or immeability of the blood, or from humours extravaſated in the ventricles of the brain, or collected in other parts. But if the cauſes, compreſſing the brain, act upon the nerves about their origin, or the medulla oblongata, whence the nerves ariſe, the ſame diſorders will evidently follow; for a free intercourſe by the nerves betwixt the organs of ſenſe, and the motion of the brain, is required, for the due exerciſe of the ſenſes, and animal motions.

APH. DCCV.

HENCE again it is evident, that the particular cauſe ought firſt to be diſcovered by its proper ſigns, before the phyſician can determine what are to be uſed, and how to be applied; for often contraries are required, and frequently a coma continues obſtinate a long time, but at length goes off ſpontaneouſly, when the concoction of the febrile matter is completed.

If, for example, a coma ariſes after profuſe evacuations, ſuch mild remedies as fill the empty veſſels are only ſerviceable; and, on the contrary, in plethoric people, or when the veſſels of the brain are too much diſtended by a rarefaction of the humours, veneſection, cooling purges, &c. are proper, which would be very hurtful in the former caſe.

caſe. Thus alſo a coma, from a cold, glutinous lentor, requires a different method of cure from one ariſing from an inflammatory tenacity.

But as a coma frequently ariſes from too great a diſtention of the larger blood veſſels, by which the pulpy fabric of the cortex of the brain is compreſſed, and by that means the ſecretion of the ſpirits into the nerves prevented; a coma, from this cauſe, has been obſerved to be obſtinate, and baffle the force of the moſt efficacious remedies. Nor will this be ſurpriſing, when we conſider that the arteries diſperſed through the encephalon are deſtitute of their callous coats, and have therefore but little elaſticity. The cure here conſiſts in moderating the heat of the fever by evacuations, and other proper means, that the impervious blood may not be drove further into the narrow extremities of the veſſels. The patient ſhould alſo ſit in an erect poſture, his feet ſhould be bathed, and epiſpaſtics applied, in order to derive the impetus of the blood from the head; his ſtrength ſhould be ſupported with ſuch food and drink as do not increaſe the circulating motion and reſiſtances. This method is fairly confirmed by Sydenham, who treated a comatous fever, that was epidemical in his time, in the ſame manner, with happy ſucceſs.

APH. DCCVI.

BUT thoſe remedies, which were directed for the cure of a delirium, are here alſo proper; eſpecially fomentations to the head and neck.

As a coma ariſes almoſt from the ſame cauſes as a delirium; and as a delirium often either precedes, accompanies, or follows a febrile coma, it is evident that the remedies recommended for the cure of a delirium will be proper for that of of a coma.

APH. DCCVII.

BUT if there are ſigns of great inflammation, it is then to be cured as a primary diſeaſe, of which hereafter, under the title of a phrenſy.

Of a PERVIGILIUM, or WATCHING.

APH. DCCVIII.

WAKEFULNESS, or watching in fevers, is a diſorder contrary to a coma, whence the nature of it may be underſtood: it has for its cauſe generally a ſlight beginning inflammation of the brain, which gradually increaſing, is often changed into a coma.

Although watching moſt certainly attends pain, anguiſh, violent paſſions of the mind, cares, &c. yet conſidered as a ſymptom in fevers, uſually proceeds from another cauſe; as when the fluids are drove through the veſſels of the brain with too violent a motion, from a greater determination of their impetus towards the head, or when they become impervious at the ſame time, whereby the veſſels are ſo much diſtended that the brain may be eaſily affected by external objects; or elſe ſuch an irritation is continually made in the common ſenſory from the ſame cauſe, that the patient cannot ſleep. If watchings continue a long time, they may produce a coma, delirium, and convulſions, and many and very dangerous, diſorders. For this reaſon Hippocrates reckons a want of ſleep either in the day or night one of the worſt ſign.

APH. DCCIX.

WAKEFULNESS is cured by reſt of body and quiet of mind; by the abſence of all ſenſible objects; by moderate cold; a moiſt air; by mild and emollient aliments, by mealy, ſoft, and emollient drinks; by a gentle, continual, and agreeable humming or whiſpering; by mealy, oily, moiſtening, and demulcent medicines; by the ſcent of ſoporiferous plants; by the uſe of anodyne, paregoric, ſoporiferous, and narcotic medicines, premiſing always the uſe of ſuch remedies as cure an inflammation, and prevent its increaſe.

By reſt of body, and quiet of mind.] What theſe are able to effect in the cure of diſeaſes, ariſing from an exceſs of the circulation was declared before at Aph. 104, 105. But the firſt ſign of approaching ſleep is a reſt of the voluntary muſcles, which become flaccid, as if they were paralytic before ſleep. But ſleep, above all things, requires tranquillity of mind. For violent paſſions, and diſtracting cares prevent ſleep, even in healthy people.

Abſence of ſenſible objects.] For when people incline to ſleep, they ſpontaneouſly cloſe their eye-lids, that the eyes may not be affected either by light, or ſenſible objects. For this reaſon the ancient phyſicians ordered thoſe who were ill of acute diſeaſes to be laid in a dark room, remote from all noiſe.

By moderate cold, &c.] In violent ſummer-heats healthy people can ſcarce ſleep in a chamber that has been expoſed to the diurnal rays of the ſun. But as the heat of the body is greater in thoſe who have a fever, a hot air will be ſtill much more troubleſome to them.

By mild and emollient aliments, &c.] Such as thoſe aliments and drinks prepared from barley, oats, rice, and the ſofteſt pot-herbs; for by theſe the acrimony of the humours is blunted, and the dryneſs of the body, which often prevents ſleep, removed.

By a gentle, continual, &c.] This we learn from experience.

By mealy, oily, &c.] As emulſions of almonds, and the greater cold ſeeds. To theſe may be added the ſeeds of the white poppy; for all theſe moiſten by their mealy tenacity, and blunt acrimony by the ſweet oil with which they abound; while, at the ſame time, they afford the beſt nouriſhment. Here alſo are proper decoctions of the lacteſcent plants, as of ſuccory, hawk-weed, dandelion, vipers-graſs, goats-beard, lettuce, &c. all which, upon wounding, pour out a milky juice of great efficacy for diſſolving the febrile viſcid, as was obſerved at Aph. 614.

By the ſcent of, &c.] The heads of flowering poppies bruiſed, henbane, common night-ſhade of the ſhops, bean bloſſoms, diffuſe a vapour, which being drawn in by the noſtrils, makes the head dull, and brings on a ſleepineſs. But this practice is not in uſe here.

By the uſe of anodyne, paregoric, &c.] As febrile watchings generally ariſe from a beginning inflammation in the brain, it will not be ſafe to give narcotics at firſt; but the cure of the inflammation is to be attempted by all the aſſiſtances of art, as by bathing the feet, frictions, an erect poſture, bliſters applied to the lower extremities, by all which revulſion is made from the head. Linen cloths, dipped in vinegar and water, applied to the forehead is one of the beſt remedies. Sydenham obſerves, that roſe water applied cold to the forehead and temples was of more uſe than any kind of narcotics, when this diſorder remained after the fever was gone off; but if the watching continues after all theſe means have been tried, and the diſeaſe in its decline, without any

ſigns

ſigns of an inflammation in the brain, then anodynes may be uſed until the diſorder is removed.

Of Convulsions in Fevers.

APH. DCCX.

A CONVULSION, deſcribed in Aph. 230, doth always ariſe from a diſorder in the brain, either by things vellicating the brain by the nerves, or from an inordinate afflux, reflux, or efflux of the nervous fluid; which may ariſe from all the cauſes that produce a delirium, coma, or pervigelium, and, therefore, there is here again a great variety as well in the ætiology, as in the method of cure.

What a convulſion is, with its ſeveral kinds, and how it may be diſtinguiſhed from a tremor, was declared before at Aph. 230, & ſeq. But there we only conſidered convulſions as far as they might ariſe from cauſes ſeated in the wound itſelf, and which aroſe chiefly from ſome matter irritating the naked nerves in the wound, &c. But ſince convulſions ſometimes accompany fevers, and then often ariſe from particular cauſes, they deſerve a particular conſideration among the other ſymptoms of fevers.

As the actions of the voluntary muſcles depend on the brain, it is evident a convulſion ought to be aſcribed to ſome diſorder therein; for the cauſe producing contraction in the muſcles is derived from the brain, by the nerves. Their immediate cauſe, therefore, always reſides in the brain, although the remote cauſes may be placed in other very different parts of the body, as will immediately appear. Even in wounds, the remote cauſes are always there ſeated, at

at leaſt they ariſe from the wound, as the productive cauſe: but convulſions in fevers, though they may likewiſe ariſe from remote cauſes, yet they may alſo proceed from a topical diſorder of the brain. As convulſions may ariſe in all muſcles, and as the lungs, ſtomach, inteſtines, bladder, &c. have muſcular fibres, it is evident that theſe viſcera may be ſeized with convulſions. For we have ſhewn before that anxiety ariſes from a convulſive contraction of the fibres in the lungs, a nauſea and vomiting from a like diſorder of the muſcular fibres of the ſtomach, gullet, &c. Therefore, convulſions in fevers take place only in thoſe muſcles which ſerve for the voluntary motions. But the common ſenſory may be affected by diſorders in other parts of the body, in the ſame manner as if the phyſical cauſe had preexiſted in the brain itſelf; from which it appears, that this alteration in the brain is produced by the nerves. See Aph. 701.

Convulſions may alſo ariſe when the tender veſſels of the brain are compreſſed, either by a plethora or rarefaction, and alſo from an emptineſs of the veſſels, whether it ariſes from an hæmorrhage, or any other evacuation of the humours. Hence Hippocrates obſerves, "that convulſions ariſe either from "repletion or inanition." Hence, likewiſe, it is evident that febrile convulſions ariſe from the ſame cauſes as a coma, delirium, and pervigilium.

APH. DCCXI.

IF convulſions continue long, they, by the conſent of nerves, eaſily affect the whole nervous ſyſtem, whence the moſt dreadful diſorders.

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BUT if convulſions follow the ſigns of an inflammation of the brain, they are generally fatal. If the urine becomes watery and tranſparent, after it has been thick, convulſions then following, are a very bad ſign. Convulſions in a fever, after profuſe evacuations, are commonly fatal, and alſo when they happen with a perpetual delirium.

It is moſt certain, that the nerves have ſuch a communication with one another, that one being affected, the reſt are diſturbed. For all the nerves run through their courſe ſeparate from each other, the ſmaller not being derived from the larger, as branches from their trunks. For the larger nerves, which reſemble trunks, are made up of bundles of ſmaller, wrapped up in one common membrane; and theſe are again made up of others ſtill ſmaller. This fabric ſeems neceſſary, that the ſpirits, ſecreted by the encephalon, and moved through the nerves, might paſs by diſtinct paſſages to every point of the body for the performance of ſenſe and motion. Thus when one part is convulſed, we ſee another affected in the ſame manner, the cauſe which produced the convulſion at firſt, being propagated into other parts of the common ſenſory; if the topical cauſe of the convulſion be from an inordinate afflux, transflux, and efflux of the nervous fluid. Or, if the nerves firſt irritated in ſome part of the body, without any topical diſorder in the brain, produce the convulſions, we are certain the cauſe is ſo powerful as to diſturb the common ſenſory, and its functions, upon which all the voluntary motions depend. See Aph. 233, where we treated of the effects of convulſions.

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It is moſt certain, that the nerves have ſuch a communication with one another, that one being affected, the reſt are diſturbed. For all the nerves run through their courſe ſeparate from each other, the ſmaller not being derived from the larger, as branches from their trunks. For the larger nerves, which reſemble trunks, are made up of bundles of ſmaller, wrapped up in one common membrane; and theſe are again made up of others ſtill ſmaller. This fabric ſeems neceſſary, that the ſpirits, ſecreted by the encephalon, and moved through the nerves, might paſs by diſtinct paſſages to every point of the body for the performance of ſenſe and motion. Thus when one part is convulſed, we ſee another affected in the ſame manner, the cauſe which produced the convulſion at firſt, being propagated into other parts of the common ſenſory; if the topical cauſe of the convulſion be from an inordinate afflux, transflux, and efflux of the nervous fluid. Or, if the nerves firſt irritated in ſome part of the body, without any topical diſorder in the brain, produce the convulſions, we are certain the cauſe is ſo powerful as to diſturb the common ſenſory, and its functions, upon which all the voluntary motions depend. See Aph. 233, where we treated of the effects of convulſions.

But

But although convulſions are at all times dangerous, yet they are ſtill more ſo in fevers. For as Hippocrates has obſerved, "It is better for a fever "to follow convulſions, than convulſions to follow "a fever." But the degree of danger is chiefly known from the cauſe, the age of the patient, and the violence, or continuance of the convulſions. For there are greater hopes of a cure when they ariſe from corrupt bile lodged about the præcordia, than when they ariſe from ſome topical diſorder in the brain itſelf. Convulſions from fulneſs are more eaſily cured, than thoſe from inanition. In infants and children convulſions ariſe from ſlight cauſes, in adults almoſt always from violent cauſes; and the more violent the more dangerous. But the continuance of convulſions does not always afford the ſame prognoſis; for it ſhews that the ſtrength of the body is ſufficient to bear ſuch repeated ſhocks, and that nature may triumph over the diſeaſe, if the functions of the brain are not more and more injured; which we know if the delirium, coma, watching, inſenſibility, &c. often attending convulſions, are not increaſed, but rather diminiſhed, and the pulſe and reſpiration free.

Signs of an inflammation of the brain, &c.] For it denotes that the inflammatory cauſe is ſo violent and deeply ſeated in the veſſels of the brain, that the medulla itſelf is affected; whence convulſions immediately enſue.

If the urine becomes watery, &c.] This ſhews that the ſalts and oils of the blood, rendered more acrid by the fever, are retained in the body, and, mixing with the circulating humours, injure the tender veſſels of the encephalon.

Convulſions in a fever after profuſe, &c.] For the cure here requires an immediate reſtitution of the loſt humours, which is impracticable in feveriſh patients, as the action of the chylopoietic veſſels and viſcera is ſo weakened that they cannot aſſimilate the aliment,

aliment, if taken, into good chyle. See what has been ſaid at Aph. 234, N°. 4.

And alſo when they happen with a perpetual delirium.] For this denotes, that all the functions of the brain are injured, that is, both the voluntary and involuntary actions.

APH. DCCXIII.

IN the cure of febrile convulſions, their particular cauſe is firſt to be diſcovered, with the part originally affected, and then, without delay, ſuch medicines are to be given as are proper to obtund acrimony, reſolve impacted matter, and relax the contracted parts. So that theſe convulſions are uſually cured by diluting, relaxing, revelling, and ſoftening medicines, nor ought any confidence to be placed in thoſe which go under the pompous title of *antiſpaſtics*.

By diluting, relaxing, &c.] For all theſe diſpoſe the fluids to an eaſy motion, correct acrimony, and ſo relax the veſſels, that they eaſily tranſmit their fluids, and, at the ſame time, ſupply a proper vehicle for the urine and ſweat. Lenient decoctions, emulſions, ſweet expreſſed oils, food of barley, oats, and the like, are uſeful. Revellents, by which the impetus and quantity of the blood is derived from the head, are likewiſe of great ſervice, as pediluvia, epiſpaſtics, frictions, and emollient glyſters.

Nor ought any confidence to be placed in, &c.] From what has been ſaid, it is evident there can be no univerſal antiſpaſmodic remedy. For a convulſion, in a plethoric habit, is cured by evacuations, but one from inanition is cured by repletion. When an inflammation of the brain excites convulſions, bleeding, and ſuch medicines as allay the violence of the fever, are the beſt.

APH. DCCXIV.

BUT if the head be the part originally affected, the cure ought to be the ſame with that directed for a coma and delirium.

See more when we come to treat of a phrenſy at Aph. 781.

Of Febrile Sweats.

APH. DCCXV.

SWEATS in the beginning of an acute fever, whoſe cauſe is more than uſually obſtinate, ariſe from a relaxation and debility of the extreme capillary veſſels, a violent circulation of the blood, and an eaſy ſeparation of the watery from the other parts of the blood.

The ſweats here meant are ſymptomatical, and always of ill preſage, as they carry off but little of the morbific matter, and diſſipate the thinner parts of the blood. They appear, without any previous ſigns of concoction, in the firſt days of the diſeaſe, but critical ſweats later, and after ſigns of concoction.

APH. DCCXVI.

IF theſe ſweats continue long, they deprive the blood of its diluting fluid, inſpiſſate the remainder, and occaſion fatal obſtructions; the blood, afterwards, hardly admitting of being either

either diluted or reſolved; hence they may produce almoſt all kinds of acute diſeaſes.

Sometimes we obſerve, in the moſt acute diſeaſes, that all the diluting liquors drank are diſcharged by urine, which is always thin and watery. This denotes, that the deluents taken are not intimately mixed with the blood; and that the ſalts and oils are retained, and the blood itſelf more and more inſpiſſated; hence a delirium, coma, convulſions, and a fatal peripneumony.

APH. DCCXVII.

SUCH ſweats are, therefore, always to be ſuppreſſed, unleſs, it appears that the matter of the diſeaſe is ſo ſubtile, that it may be carried off by the firſt ſweats.

It is evident from what has been ſaid, that ſweat, in the beginning of acute diſeaſes, is hurtful, and ought to be ſuppreſſed; for the febrile matter which was to be attenuated and ſubdued by a due moderation of the fever, is not yet prepared for expulſion. But we muſt except the plague and peſtilential fevers, wherein the morbific matter is evacuated by the firſt ſweats.

APH. DCCXVIII.

SUCH ſweats are prevented by riſing out of bed, or by ſitting up; by leſſening the bedcloaths; by admitting of cool air; by abſtaining from hot, or heating liquors; by taking a great quantity of thin, ſoft drinks, in ſome degree cold, that the loſs of what is diſſipated may be ſpeedily repaired, and by reſtraining the too

too quick circulation of the blood by the method directed at Aph. 102, & ſeq.

By riſing out of bed, &c.] For nothing relaxes and weakens ſo much as lying in bed. But no prudent phyſician will adviſe a ſweating patient to be ſuddenly taken out of bed, and expoſe his body to the cold air, as the ſudden application of cold to a body hot, and in a ſweat, may be productive of many ill conſequences. The ſweat is, therefore, firſt to be leſſened by gradually removing the bed-cloaths, and, when it has ceaſed, the patient may put on his cloaths, and ſit in a chair; or, if very weak, may lie upon his bed, and then cool air may be admitted without any hurt.

By abſtaining from hot, or &c.] For every thing actually hot increaſes ſweating.

By taking a great quantity of thin, &c.] For by ſuch kind of drinks the thinner parts of the fluids, diſſipated by the profuſe ſweats, are beſt reſtored. But very cold drink, eſpecially in large quantities, would be dangerous to patients much heated: as the blood is eaſily coagulated by intenſe cold, and more readily, in the preſent caſe, by the diſſipation of its thinneſt parts. It will, therefore, be beſt to give the drink in ſmall quantities, and often. By what means the circulation may be leſſened, ſee the Aphoriſms referred to in the text.

But as a weakneſs and relaxation of the cutaneous veſſels has been mentioned as a cauſe of ſweating, and as the remedies here recommended do not ſeem well adapted to the cure of this weakneſs and relaxation, it will be neceſſary to give the proper method of cure.

The ancient phyſicians applied to the ſkin ſuch things, as, by their aſtringent virtue, ſtrengthened the relaxed pores of the ſkin. Ægineta has recommended many remedies of this kind, and even directs to anoint the body with oily or fat ſubſtances, which, by blocking up the pores of the ſkin, might prevent the thin-

thinner fluids from exhaling through theſe paſſages. The Romans uſed to anoint the bodies of the athletæ, leſt, by too violent exerciſe, they ſhould melt into ſweats. Celſus alſo orders, for the ſame purpoſe, "the ſkin to be hardened with nitre, or ſalt mixed with oil—; if the diſorder is ſlight, with ſimple oil only; but, if more violent, with oil of roſes, quinces, or myrtles, with the addition of ſome rough wine." But as theſe applications muſt be attended with great trouble; and, as it is always dangerous to ſuppreſs ſweats by conſtringing the cutaneous pores, eſpecially while the violence of the circulation continues to agitate the humours; for theſe reaſons ſuch remedies are ſeldom put in practice, though medical hiſtory ſhews that they have been ſometimes uſeful.

But there is another kind of ſweat which we frequently meet with towards the end of long continual fevers; and alſo in thoſe who remain languid and weak after they have recovered from ſlow, lingering fevers. For ſuch patients are no ſooner laid in bed, though but moderately covered with cloaths, but they begin to grow hot, and ſoon after run down with ſweat. Sydenham uſually, in ſuch caſes, gave five or ſix ſpoonfuls of old Malaga wine, by the uſe of which they gradually recovered ſtrength, and the ſweats diſappeared. An infuſion of ſage, made in wine, and taken morning and night, has the ſame good effect; and, if the ſweats do not yield to this, the ſame infuſion, made in brandy, and taken in the quantity of two ſpoonfuls, twice a day, never fails, when theſe night-ſweats ariſe from relaxation.

Of a DIARRHEA in FEVERS.

APH. DCCXIX.

A DIARRHÆA has for its matter mucus, lymph, glue, pus, ſanies, blood, and other juices derived from the noſe, mouth, fauces, œſophagus, ſtomach, liver, gall-bladder, pancreas, inteſtines and meſentery; and, for its cauſe, a violent expulſive force of the inteſtines, and a weakneſs of their contractile powers, or an obſtruction of the abſorbing *or lacteal* veſſels of the inteſtines, hindering the ingreſs into the blood.

In treating of a diarrhæa three things are chiefly to be regarded; namely, the different humours evacuated, the different parts from whence they are derived; and, laſtly, the cauſes which depoſite theſe humours into the cavity of the inteſtines. We ſhall, therefore, firſt ſee what medical obſervation has taught us concerning the matter diſcharged by a diarrhæa.

Mucus.] By this name we mean a thick, ropy humour, hardening into ſcales, and drying into a tophaceous matter, reſolvable again, in water only, by maceration. A mucus of this kind we find in the the noſe, the fauces, the mouth, ſtomach, &c. which is ſometimes expelled in a diarrhæa. Sometimes, alſo, the organs, which ſeparate this mucus, are ſo affected by diſeaſes that great quantities of it are generated, as in catarrhs, coughs, &c. Hence Hippocrates obſerves, "That thoſe who have frothy "ſtools in a diarrhæa, have a defluxion of phlegm from the head." For the ancients, who were ignorant of the circulation, ſuppoſed that phlegm was col-

lected in the brain, which they pronounced to be the coldeſt part, and the leaſt abounding with blood.

Lymph.] The ſaliva, the liquids ſecreted in the ſtomach and inteſtines, the pancreatic juice, the hepatic bile, may all ſupply the matter for a ſerous or lymphatic diarrhæa.

Glue.] More tenacious than the natural mucus, and ſometimes produced by that accumulated and thickened by long ſtanding; but often this glue ariſes from too glutenous a diet, as was demonſtrated before, when we treated of the gluten ſpontaneum at Aph. 69, *& ſeq.* See alſo Aph. 71.

Pus, ſanies.] Namely, when a vomica, breaking in the ſtomach, inteſtines, or adjacent viſcera, diſcharges its matter into theſe parts where they uſed to convey their healthy humours. But matter lodged in other parts of the body, which do not evacuate themſelves into the ſtomach and inteſtines, may be depoſited into theſe parts, as was obſerved at Aph. 406. The ſame is alſo true of pus long confined, which is converted into ſanies, or corruption.

Blood.] Bloody fæces from an eroſion, or ulceration of the inteſtines, are attended with pain and griping; and then the diſorder is rather a bleeding dyſentery than a diarrhæa. But ſometimes blood is diſcharged by the anus, from the dilated mouths of the hepatic or meſenteric veſſels, or from the hæmorrhoidal, without a rupture, and without any conſiderable pain. Theſe are principally the humours which ſupply the matter of a diarrhæa; but to theſe the bile is to be added, though it is not mentioned among them. But where we treat of the parts from whence the matter of a diarrhæa flows, the gall-bladder is mentioned, and according to the various mixture of all theſe humours, there again ariſes a great difference.

From the noſe, mouth, fauces, &c.] For from all theſe parts there is a direct paſſage into the inteſtines. From the liver there is one by the porus

biliarius into the duodenum, and from the gall-bladder by the cyſtic duct; from whence may follow bilious, hepatic, atrabiliary, and other kinds of diarrhæas. The ſame is alſo true of the pancreas. But that the humours derived from other and the moſt diſtant parts of the body may be diſcharged by ſtool, is evident from the effects of cathartics, by the repeated uſe of which, the whole body may be exhauſted. But the truth of this appears in nothing more evident than in a cholera morbus, where in a few hours the diſcharge of humours, both by vomiting and purging, is ſo great, that the ſtrength is deſtroyed, and the patient thrown into convulſions, though there is not one drop of blood diſcharged, either upward or downward.

And for its cauſe a violent expulſive force, &c.] But this cauſe alone is not ſufficient: for if the lacteals imbibe the humours thrown upon theſe parts, there will be no diarrhæa. If a healthy perſon drinks twelve pints of ſpa-water, there is often not ſo much as a drop dicharged by ſtool; but all is abſorbed by the bibulous veins, and carried off either by urine or ſweat. There is therefore required a great contractile force in the inteſtines to enable them to retain ſo great a quantity of liquor, and prevent it from eſcaping by ſtool. But when this contractile power is weakened, whatever is depoſited in the inteſtines from what part of the body, is then carried off by ſtool, either in part, or in the whole.

There is yet another cauſe of a diarrhæa ariſing from irritation, namely, when a vermicular or periſtaltic motion of the inteſtines is ſo accelerated as to protrude their contents ſooner towards the anus, as appears from the action of cathartics, which by their ſtimulus increaſe this motion, and force the humours towards the rectum. See Wepfer. p. 253.

Or an abſtruction of the abſorbing veſſels, &c.] For if the great quantity of fluids collected in the cavity of the inteſtines, to which we may add our food

food and drink, is not abſorbed by the lacteals, or conveyed by the meſenteric veins into the *vena portarum*, the ſtools muſt conſequently become more fluid and more numerous. This is often the caſe when the mouths of the lacteals are ſtopped up by ropy mucous humours, and in apthous incruſtations. Hence a diarrhæa is almoſt conſtantly fatal in the worſt kind of aphthæ. The ſame happens to children who have very turgid bellies, and though the diarrhæa is continual, yet the bulk of the abdomen does not, in the mean time, leſſen.

APH. DCCXX.

IT is therefore evident, that a diarrhæa in fevers is manifold with reſpect to its matter, cauſe, effects, and events; that it is often abſolutely incurable, and that it is ſeldom colliquative; but when it is, hardly ever curable.

Matter.] We have ſhewn, in the preceding aphoriſm, whence the matter is ſupplied. From the matter evacuated in the diarrhæa, Hippocrates has many uſeful prognoſtics. "Stools that are either very "watery, white, of a greeniſh yellow, intenſly red "or frothy, are bad. Stools ſmall in quantity, glu-"tinous, white or paliſh, and ſmooth or ſhining, are "alſo bad; but thoſe which are black, fat or oily, "livid, or of a dark green and fetid, are ſtill more "fatal." He alſo condemns ſincere or unmixed ſtools.

Cauſe.] The cauſes are very different, as we obſerved in the preceding aphoriſm; but each of theſe claſſes again comprehend a number of different cauſes. Thus the cauſes expelling the humours into the inteſtines are various. One riſing warm out of bed, and expoſing his body to the cold air, is often ſeized with ſlight gripings, and ſoon after with a flux, or

ſeveral liquid ſtools; for the perſpirable matter being ſuddenly obſtructed, the humours then are determined towards the inteſtines. Acrid bile in acute diſeaſes, and acid acrimony in young children, are frequently the real cauſe of a diarrhæa.

Effects, and event.] For if a diarrhæa carries off the redundant humours, even though they be healthy, or morbid, without weakening the patient, the effects will be good, and the event ſalutary; but a loſs of healthy and neceſſary humours, or large evacuations which the patient's ſtrength cannot ſupport, have a contrary event. Thus even a diſcharge of blood by ſtool in plethoric people from an anaſtamoſis is ſometimes ſalutary; but when the ſame ariſes from an eroſion of the veſſels, it is often attended with the greateſt danger. But to judge whether a diarrhæa is ſalutary or not, the following aphoriſm ought to be well conſidered: "In ſpontaneous vo-"mitings and purgings, if they carry off ſuch hu-"mours as ought to be evacuated, they are uſeful, "and eaſily endured; but otherwiſe, they are detri-"mental. So likewiſe an evacuation of the veſ-"ſels (if made as it ought to be) is beneficial, and "eaſily borne, otherwiſe the reverſe: regard ought "therefore to be had to the country, ſeaſon of the "year, age of the patient, and the diſeaſes in which "evacuations are neceſſary or not." Aph. 2. ſect. 1.

That it is often abſolutely incurable.] Such ſometimes is the malignity of the matter, and ſuch is the violence with which it is diſcharged; that it baffles all the endeavours of art. Hence Hippocrates ſays, "In whatever diſeaſe the atrabilis is diſcharged, ei-"ther upward or downward in the beginning, it is "a fatal ſign." And that a violent flux, in ardent fevers, is alſo fatal, as is confirmed by many caſes in his epidemics. The matter of a vomica, cancer, &c. diſcharged into the inteſtines, excites diarrhæas or dyſenteries, incurable by any art. Hence Hippocrates obſerves, that a diarrhæa from a diſeaſe of long

long continuance is bad. If the inteſtines become paralytic, or are ulcerated by long continued dyſenteries, it is likewiſe evident enough that there are but ſmall hopes of recovery.

That it is ſeldom colliquative, &c.] Though in a long continued diarrhæa the body is waſted, yet every diarrhæa is not colliquative; for a colliquative flux, properly ſo termed, is that only which comes after long continued diſeaſes, and eſpecially after ſuppurations of the viſcera, dropſies, and pulmonary conſumptions.

APH. DCCXXI.

IF the diarrhæa continues a long time, it diſpoſes the abdominal viſcera more and more to the ſame diſeaſe, weakens, excoriates, and inflames them; it drains and exhauſts the other veſſels aud viſcera: hence an atrophy, leanneſs, weakneſs of the body; a dyſentery; an inſpiſſation of the fluids throughout the whole habit of the body; a laxity of the ſolids; a loſs of the fluids; a leucophlegmatia, dropſy, and tabes.

If the diarrhæa continues, &c.] A continual afflux of humours muſt macerate the internal ſurface of the inteſtines, and relax alſo the mouths of the arteries and excretory ducts of the viſcera, and therefore they will leſs reſiſt the impulſe of the humours, and more eaſily tranſmit them; and thus the body will be habituated to ſend a great quantity of liquids to thoſe parts. At the ſame time the excretions by urine and inſenſible perſpiration will be leſſened; beſides, it is often difficult to reſtore weakened veſſels and viſcera to their former ſtrength.

Excoriates and inflames.] When the natural mucus which defends the extremities of the veſſels is

abraded by the acrimony of the humours, it is then evident that pain and inflammation muſt frequently enſue.

Drains and exhauſts the other veſſels, &c.] For although morbid humours are ſometimes carried off by a diarrhea in the beginning of a fever; yet if the diarrhæa continues, the healthy fluids will be exhauſted, and the *ingeſta* diſcharged by ſtool, before chyle can be prepared from them, to ſupply the loſs of thoſe fluids which are daily waſted by the actions of health.

Hence an atrophy, leanneſs, &c.] An atrophy from the loſs of thoſe juices, which ought to repair what is conſumed; and as the remaining humours become acrid for want of freſh chyle, the fat will be diſſolved, and evacuated by ſtool; hence leanneſs. Weakneſs will likewiſe ariſe from an emptineſs of the veſſels, as we demonſtrated before in the comment to Aph. 661.

Dyſentery.] Which properly denotes no more than a diſorder of the inteſtines, and when it is attended with ſevere gripings, a frequent teneſmus, with a ſharp pain, and a diarrhæa, is then uſually termed a dyſentery.

An inſpiſſation of the fluids, &c.] For by a long continued flux the thinneſt parts of the blood are carried off, and conſequently the remainder will be thickened.

A laxity of the ſolids, and a loſs of, &c.] Not only in the inteſtines, but likewiſe throughout the whole body; and the frequent diſcharge of liquid ſtools muſt alſo waſte the fluids.

A leucophegmatia, dropſy, &c.] Although it may ſeem wonderful that the body ſhould ſwell with water, when the moſt fluid parts are continually carried off by the diarrhæa; yet this is nevertheleſs true. For thirſt generally attends a profuſe diarrhæa; and though the drink is moſtly diſcharged by ſtool, yet ſome part of it is abſorbed, and from the weakened coheſion

coheſion of the ſolids is depoſited in the thorax or abdomen, and produces a dropſy; or if it is collected in the panniculus adipoſus, it then produces a leucophlegmatia. But as in a diarrhæa thoſe juices are evacuated which ought to nouriſh the body, nutrition will be defective, and the body waſte away. Having thus premiſed every thing that belongs to the matter, cauſes, diagnoſis and prognoſis of a diarrhæa, it remains for us to treat of its cure as a febrile ſymptom.

APH. DCCXXII.

THE cure is performed by ſoftening the irritating acrimony; by expelling it with vomits, purges, and glyſters; by ſtrengthening the relaxed veſſels; by quieting the impetus of the humours with narcotics; by diverting them another way, either by ſweat or urine; and by evacuating the morbific matter, firſt correcting the principal cauſe of it.

All diarrhæas are not to be ſtopped; for, as we ſaid before, ſometimes they evacuate morbid humours, and ſometimes the redundant healthy humours. But as the general cauſes of a diarrhæa are different from one another, and depend on very different circumſtances; it is evident that no univerſal method of cure can be delivered. See Aph. 719. Yet all theſe various methods may be properly reduced to thoſe enumerated in the preſent aphoriſm.

By ſoftening the irritating acrimony.] This may be obtained by ſuch remedies as dilute and abſorb acrimony, ſo as to render it inactive; or by ſuch as are of an oppoſite nature to the known acrimony. The firſt indication is anſwered chiefly by diluents; for by theſe acrid matter of any kind may be ſoftened and waſhed out. In the cholera morbus, Sydenham gave

gave a broth of chickens, but ſo thin, that it had hardly the taſte of fleſh; and when broth could not be had, he gave any other diluent ſoft liquor: and glyſters of the ſame were ordered to be frequently injected, with a view of weakening the irritating acrimony. See Aph. 605. N°. 6.

But if the diarrhæa ariſes from a viſcid or acrid bile, or from a rancid fattiſh matter adhering to the inteſtines, ſaponaceous remedies ſhould be added to the watery diluents, ſuch as honey, rob of elder-berries, red currants, &c. Such things as abſorb and blunt acrimony are likewiſe ſerviceable; as they line and defend the internal ſurface of the inteſtines, and guard it againſt the ſtimulus of the irritating matter. For this reaſon emollient herbs, both roots, leaves, and flowers are added to the water, ſuch as comfrey, mallows, marſh-mallows, oats, millet, &c. The ſweeteſt and ſofteſt expreſſed oils, either drank, or injected by glyſters, are likewiſe beneficial; but as theſe are apt to turn rancid when there is any febrile heat, emulſions from the oily ſeeds are rather preferable. The medicinal earths, ſuch as terra ſigillata, bole armenic, and the like, have the ſame good effects, as they blunt every kind of acrimony by their mild ſoftneſs, and at the ſame time abſorb any latent acid. But all theſe are injurious, when the diarrhea ariſes from a laxity of the inteſtinal fibres, as they muſt relax and weaken ſtill more, and only take place where the acrid irritating matter can be corrected and ſoftened.

But when the particular irritating acrimony is known, we muſt then uſe the proper corrector of it. Thus when a diarrhæa ariſes in young children, with green ſtools, and acid eructations, we are certain that the irritating cauſe is an acid. In this caſe, the earthy abſorbents, as crabs-eyes, coral, calcined hartſhorn, &c. are of ſo great ſervice, that many have believed them ſpecifics in all kinds of diarrhæas. but without foundation; for they are of no uſe, when a putrid

a putrid alcaline acrimony is the cauſe of the diſeaſe. In what manner the different acrimonies are to be cured, was ſaid before, in the comment to Aph. 605.

By expelling it with vomits, &c.] When the irritating matter, which produces a diarrhæa, can be expelled by evacuations, the diſeaſe is ſoon cured; for it is a work of much longer time to correct acrimony, than to expel it, when it can be ſafely done. This method we are taught by nature, which endeavours to evacuate the offending matter, and when it is expelled, either by vomiting or ſtool, the diarrhæa often ceaſes ſpontaneouſly; but when this matter is either too copious or tough, art muſt aſſiſt nature to diſcharge it, either upward or downward, leſt being too long retained, it ſhould make the diſeaſe of long continuance. As in a flux all the humours flow almoſt ſpontaneouſly towards the inteſtines, this ſeems to be the way that nature endeavours to throw off the irritating matter, and ought therefore to be followed; yet practical obſervations ſhew, that frequently diarrhæas and dyſenteries are happily cured by vomits; whether this is effected by an evacuation of the matter lodged about the ſtomach and upper inteſtines, or by rendering it moveable by the force of vomiting, or by an inverſion of the periſtaltic motion of the inteſtines. The firſt effect of vomiting is proved by Degner[a], the ſecond by Sydenham[b], and the laſt by numerous obſervations. I have myſelf ſeveral times uſed aſtringents and other remedies for the cure of long continued diarrhæas, but always without ſucceſs; whereas a vomit given three mornings together has removed the diſorder, although there were no ſigns indicating that any thing was lodged about the *primæ viæ*, that could occaſion the flux.

From theſe effects of vomiting, the ipecacuanha ſeems to have gained the reputation of a ſpecific in

[a] De Dyſenteria, p. 21. [b] Cap. iv. pag. 63, &c.

all

all diarrhæas and dyſenteries, although any kind of vomit would produce the ſame effects; but ipecacuanha is deſervedly more in uſe, becauſe it does not raiſe ſuch diſturbances in the body as antimonal vomits, and may be ſafely given even to infants.

But purgatives are often beneficial, when the irritating matter lies in the inteſtines, or about the ſtomach, and when the fever is neither attended with ſickneſs or nauſea. In this caſe, the ſeveral kinds of rhubarb have been highly recommended. Glyſters have likewiſe been of great advantage, eſpecially in young people, and in thoſe who have an averſion to medicines; but then they ought not to exceed the quantity of three or four ounces.

But all theſe only take place when there are hopes of expelling the irritating matter this way, and when the viſcera are ſound and healthy; for if the liver is affected, the concuſſions of the abdomen in vomiting might deſtroy the friable viſcus, and produce an hypercatharſis. This method of purging and vomiting would alſo be of moſt dangerous conſequences when the inteſtines are inflamed; for, as we before obſerved, a diarrhæa and dyſentery often ariſe from an inflammation of theſe parts.

By ſtrengthening the relaxed parts.] Namely, when the diarrhæa ariſes from a weakneſs and laxity of the inteſtines, or when a laxity remains, after the irritating matter has been expelled. By what remedies this may be done, was ſaid before in the comment to Aph. 28. N°. 4. To this purpoſe conduce a drying diet, little drink, and ſtrong at the ſame time. But corroborating medicines are beſt given in a ſolid form, that they remain a longer time in the inteſtines, and be ſucceſſively applied to every part of them. Foreſtus extols the uſe of unripe medlars; but before aſtringents are uſed, we ought to be certain that the irritating matter is expelled, and that the only remaining diſorder is a flaccidity of the ſtomach and inteſtines; for if a flux is ſuppreſſed by aſtringents

aſtringents before the noxious humours are carried off, the moſt dangerous diſorders often enſue. That they are expelled, may be known from the continuance of the diſeaſe; from the vomiting and purging medicines that have been uſed; from an abatement of the pain, and gripings; and from the colour of the ſtools; for while they are fetid, black, livid, purulent, &c. aſtringents are injurious.

By quieting the impetus of, &c.] See what has been ſaid of narcotics in the comment to Aph. 610. But opium diſſolved in milk, and injected in the form of a glyſter, ſuppreſſes almoſt every kind of flux, and removes the moſt ſevere gripes. An ounce of theriaca, of which opium is an ingredient, diſſolved in a quarter of a pint of milk, will, injected by the anus, ſtop for ſome hours that fatal diarrhæa which attends the laſt ſtage of a conſumption.

By diverting them another way, &c.] That a febrile diarrhæa is often cured by ſweat, we are taught by daily obſervation; but then ſuch ſweats muſt ariſe from the ſtrength of the vital powers, by which the morbid matter is determined towards the ſkin, and diverted from the inteſtines; for other ſweats are rather of fatal import, according to the obſervation of Hippocrates.

Or urine.] It is very evident that profuſe fluxes leſſen the other excretions. Degner obſerves, that many patients made no urine for the ſpace of ſix, eight, ten, or fourteen days, in an epidemic dyſentery which he deſcribes. A due diſcharge of urine is therefore a good ſign, and denotes that the inteſtines do not diſcharge all the ingeſta, but that ſome of it is abſorbed by the lacteals, mixed with the blood, and afterwards diſcharged by urine. For both theſe evacuations of ſweat and urine are ſalutary, as acrid particles are by thoſe paſſages expelled, which being retained in the inteſtines, would cauſe an irritating ſtimulus. But it ſometimes happens, in diarrhæas and dyſenteries, that theſe evacuations are ſuppreſſed either

either ſpontaneouſly, or by the untimely uſe of aſtringents, whence the offending humours are tranſlated to other parts of the body, and produce new diſeaſes. Sydenham obſerved the worſt kind of aphthæ to proceed from this cauſe, and others, epilepſies and pleuriſies.

By evacuating the morbific matter.] Which is done by vomits, purges, or glyſters, if it is lodged in the inteſtines; but if it is derived into the inteſtines from other parts, a more copious diſcharge by ſweat or urine may often anſwer the ſame end.

Firſt correcting the principal cauſe of it.] That is, if we know that the inteſtines are ſupplied with acrid humours from an univerſal cacochymy of the blood, or the like humours collected in any particular part, and theſe conveyed into the inteſtines. Thus in the worſt degree of the ſcurvy, diarrhæas and dyſenteries enſue, which are not to be cured until the malignant cacochymy of the humours is firſt removed or corrected. See Aph. 1151. N°. 4. But when theſe diſorders ariſe from an abſceſs of the liver continually diſcharging its matter into the inteſtines, it is ſufficiently evident how difficult it muſt be to remove the firſt cauſe of the diſorder. Or if a ſcirrhus formed in the liver degenerates into a cancer, and erodes the inteſtines by its acrid virus, who will be bold enough to promiſe a cure? The art of healing has its bounds, and the phyſician who knows how to diſcover an incurable diſeaſe, merits as much as he that removes one that is curable.

Of Exanthemata, or Eruptions in Fevers.

APH. DCCXXIII.

THE matter of inflammatory puſtles is ſomething that cannot paſs through the ſmalleſt veſſels of the ſkin, but adheres or ſtops there; and their cauſe, the force of the circulatory, ſecretory, and excretory powers of life; hence theſe eruptions are of different kinds, according to the variety of the cauſes which produce them, ſo that fevers receive their names from the different eruptions with which they are attended, as eryſipelatous, ſcarlet, red and purple petechial, morbillous and variolous.

The word exanthemata is uſually applied to thoſe humours which break out in the ſkin, and form a kind of puſtules, or roughneſs. Celſus calls them puſtules, and tells us they are of ſeveral kinds; but theſe are all called by the ſame name of exanthemata, or effloreſcencies, whether they riſe or do not riſe above the ſkin, but only appear rough. Both theſe kinds are called exanthemata by Hippocrates; for in deſcribing the caſe of Silenus, he ſays, "that on the "eighth day there appeared ſmall, round exanthe-"mata, of a red colour, and like warts, which did "not ſcale off."

As theſe exanthemata appear in the ſkin, it is evident that they ariſe from ſome matter that cannot paſs through the cutaneous veſſels. But we obſerve the ſame kind of exanthemata to break out when theſe veſſels are conſtringent by acrid humours, or by external ſtimuli. Thus ſtrong people who labour hard in

in the ſummer heats, and whoſe ſweats are ſalt, and of a rank ſmell, are frequently ſeized with ſuch exanthemata, attended with a very troubleſome itching. Beſides, there are ſome obſervations which ſeem to confirm, that the cauſe of itching and exanthemata is ſometimes lodged in the ſtomach, and about the præcordia. When one eats a poiſonous muſcle, there ſoon follows great anguiſh, and the ſkin almoſt of the whole body is beſet with exanthemata, and a violent itching; but if the contents of the ſtomach are immediately expelled by white vitriol, thoſe efflorescencies, with the anguiſh, ſoon diſappear: nor does it ſeem probable that this poiſonous acrimony mixes with the blood, and paſſes together with it to the ſkin, as after vomiting the diſorder quickly ceaſes. It may be, therefore, aſked, whether exanthemata may not, in the like manner, be produced in fevers, when malignant ſordes are collected about the præcordia? At leaſt, what I have obſerved in my own practice ſeems to confirm this opinion; namely, that when theſe foul humours are evacuared, the exanthemata vaniſh. The caſe of Silenus is favourable to this opinion; from the firſt day were diſcharged ſincere, bilious ſtools, frothy, and afterwards thin and black. On the 6th, they were ſuppreſſed; on the 8th, ſmall round exanthemata broke out, poſſibly becauſe the matter was collected about the præcordia, which before eſcaped by ſtool, but there rendered more malignant by the fever. For Hippocrates remarks, that from the beginning to the end of the diſeaſe, there was a continual beating in the hypochondria. And in the coacæ prænotiones he ſays, "That thoſe who have a flux ſuppreſſed with anxiety, eruptions ſoon after break forth like the bitings of gnats." And that "itching eruptions of the ſkin denote a diſcharge of black ſtools, and grumous vomitings." From all which we may conclude, that a proper regard ought to be had to theſe caſes.

But from whatever cauſe the eruptions may ariſe, it is certain that ſuch particles ſtick in the cutaneous veſſels as cannot freely paſs through them, either from a fault in the fluids, or in the veſſels, or in both together. But as febrile eruptions moſt frequently ariſe from a critical diſpoſition of the morbific matter in ſome of the obſtructed, dilated, or ruptured veſſels, (ſee Aph. 593.) it is evident, that their efficient cauſe is the vis vitæ, which circulates the humours through the veſſels, ſeparates, and diſcharges them by various paſſages. Theſe exanthemata are therefore of various kinds, according to the diverſity of their cauſes; and as they give name to ſome fevers, the moſt obvious of theſe are here enumerated.

Eryſipelatous.] We have before ſaid what an eryſipelas is at Aph. 380 and 593. This fever moſt frequently happens towards the end of ſummer, and begins with a redneſs and pain about the ears or adjacent parts. In the ſkin of the affected part there appears a number of ſmall puſtules, which, as the diſeaſe increaſes, riſes into bliſters full of ichor: afterwards the eryſipelas ſpreads, and ſeizes other parts of the face, which it often ſwells in a ſurpriſing manner. This is the moſt frequent kind of eryſipelas, the beginning of which ſeems to have been known by Hippocrates, when he ſays, "Redneſs about the "ear, ariſing from a preceding pain in fevers, ſhew "that an eriſipelas is about to follow in the face; "but from theſe diſorders follow convulſions, with "ſtammering and loſs of ſpeech;" that is, when an eryſipelas does not throw itſelf out, but invades the internal parts of the head. There is alſo another kind of eryſipelas deſcribed by Sydenham; "It be-"gins with a fever, and ſoon after is followed with "an eruption of puſtules almoſt over the whole "body, reſembling thoſe from the ſtinging of net-"tles. Soon after they diſappear, and, like pim-"ples, lie concealed under the ſkin, where they

" cauſe an intolerable itching, and after the gentleſt " ſcratching come out a new."

Scarlet.] Very like an eryſipelatous fever, but of a different kind. The ſcarlet fever ſpreads itſelf throughout the whole body; but the eryſipelatous is generally confined to the face; or, if it ſeizes any other part, yet it does not extend over the whole. This fever happens chiefly to infants, and after the red ſpots have continued two or three days, they diſappear with a ſcaling of the cuticle.

Red and purple petecheals.] This name is generally given to fevers of the malignant kind ſpreading epidemically, and accompanied with ſmall ſpots in the external ſkin, which do not riſe above the ſurface. Sennertus calls them puncticular fevers, becauſe the ſkin is marked with very ſmall points, ſometimes red and ſometimes purple. They are alſo termed lenticular, when the ſpots of the ſame colour are broader. The red petechiæ are uſually of a good kind; but the purple, livid, and black are of a malignant nature, and almoſt conſtantly fatal. But although theſe eruptions accompany epidemic fevers of a particular kind, yet purple or black petechiæ appear in other dangerous diſeaſes as ſigns of approaching death.

But petechial fevers, properly ſo called, are thoſe which rage epidemically, and in which ſmall red, aſh coloured, purple, livid, or black ſpots break out in the ſkin, ſooner or later, according to the violence of the diſeaſe; and indeed this critical depoſition of the morbific matter towards the ſkin, is cuſtomary in theſe fevers. If it happens at a proper time, that is, on the fourth or ſeventh, or (when the fever is moderate) on the fourteenth day, eſpecially if the exanthemata are not very numerous, and of a red colour, the event is favourable; the pulſe then riſing, and the other ſymptoms, as watchings, delirium, intolerable thirſt, ringing of the ears, &c. ceaſing, or at leaſt very much leſſening. But when theſe exanthemata

themata did not break out at all, or if they were livid, black, and very numerous, there was always the greateſt danger, as Donkers obſerves.

The ſtricteſt inquiry ought therefore to be made into the nature of the diſeaſe, in which theſe exanthemata appear; for ſometimes they ariſe from the violence of the fever, or from a hot regimen, and then nothing good can be expected from them. But when they attend epidemic fevers, in which the morbific matter is thrown outwards, they are of great ſervice.

APH. DCCXXIV.

IT is cuſtomary to treat of the laſt three fevers ſeparately; but the diagnoſis and prognoſis of the three firſt may be eaſily formed.

For the petechiæ, eſpecially the purple, the meaſles, and ſmall-pox, as they differ widely, are uſually treated of ſeparately by authors, though they are comprehended under the general name of exanthemata. But the other febrile exanthemata require almoſt one and the ſame method of cure. The diagnoſis is eaſy, as they lie expoſed to the eye, being ſeated in the external ſurface of the ſkin: nor will the prognoſis be difficult, as there does not ſeem to be much danger in them; for there are febrile eruptions which never deſtroy the patient.

APH. DCCXXV.

THE cure of theſe eruptions is not difficult; for they ſeldom require any thing more than to keep the matter moveable by a ſufficient quantity of thin drinks, and by carefully ſupporting the vis vitæ; for then in a ſhort time they go away, with a deſquamation of the cuticle.

As theſe eruptions are the ſalutary efforts of nature to drive the morbific matter to the ſurface of the body, there is evidently no occaſion for many remedies. It is ſufficient for the patient to take a large quantity of diluting drinks, to keep the matter thin and moveable. This is happily effected by decoctions of the roots of graſs, vipers graſs, burdock, &c. with the juice of citrons, lemons, and a little nitre; or by the woods of ſanders, ſaſafras, &c. infuſed in a large quantity of water, which, by a gentle, aromatic ſtimulus, promote a diaphoreſis without conſiderably increaſing the motion of the circulating humours. At the ſame time, care muſt be taken to preſerve the vital powers in a juſt balance; neither ſo high as to increaſe the fever, nor ſo low as to depreſs the ſpirits. How this is to be done we have already ſaid at Aph. 609 to 612. Hence Sydenham directed no medicines in the ſcarlet fever, but ordered the patient to keep his room, and abſtain from ſpirituous liquors of all kinds, and from fleſh. Yet he adviſes, if convulſions, or a coma happen during the eruption, that a large bliſter ſhould be applied to the neck, a paregorick immediately given, and repeated every night until the patient recovers.

When the exanthemata vaniſh, the cuticle commonly ſcales off; at which time a gentle purge may be given. But if theſe ſigns, which denote foul humours, are lodged about the præcordia, from whence exanthemata ſometimes ariſe, it will then be proper to carry them off either by a purge or a vomit.

APH. DCCXXVI.

THE other ſymptoms of a fever, ſimilar, and of a like nature to theſe, require the ſame method of cure as the diſeaſes on which they depend.

APH.

APH. DCCXXVII.

HENCE it appears what we ought to think concerning the variety of acute fevers; for thoſe which continue the febrile motion to the end, when once begun, are called *continual fevers*; but thoſe, which at intervals, abate their force, and renew it again, without entirely ceaſing, are termed *continual remitting fevers*; but thoſe again, which remit ſo intirely, as to leave the patient free from any fever betwixt any two paroxyſms, are called *intermitting fevers*.

Having thus delivered the general hiſtory and cure of fevers, and of the principal ſymptoms enumerated at Aph. 627, the different kinds of fevers ought next to be conſidered, in order to ſee whether they require any thing different in their cure, from what has been laid down for the cure of fevers in general. Properly ſpeaking, there are but two diſtinct kinds of fevers; one which continues the whole time of the diſeaſe; and the other which runs through its courſe by fits, going off, and returning again at intervals. The firſt is termed *continual*; but the latter, if there is a perfect abſence of the fever between the fits, is called *intermittent*. But when the violence of the fever only abates, and increaſes again at intervals, never perfectly going off, though it is at one time more violent, and at another time more remiſs, it is then called a *continual, remitting fever*, to diſtinguiſh it from a *continual*, which runs through its courſe without any paroxyſms. Intermittents ſometimes join, and continue their paroxyſms in ſuch manner, that they put on the face of a continual fever, and cannot be eaſily diſtinguiſhed but by thoſe who are well ſkilled in practice. For example, if an

intermitting tertian is doubled, a new fit invades the patient on the day which is free from the fit in a ſimple tertian, and then ſuch a fever reſembles a quotidian; from which however it is diſtinguiſhed, becauſe the paroxyſms, which invade every other day, are like each other as to the hour of invaſion, number, violence of the ſymptoms, and continuance of the fit itſelf; and, at the ſame time, there is generally a conſiderable difference between the fits themſelves, which follow immediately after each other. Thus the paroxyſm of a double tertian, which invades on the firſt day, will be like that which returns on the third, but different from that which happens on the ſecond day, which laſt will again be like the fit which attacks on the fourth day, and ſo on. If now the fits are ſo protracted in a tertian, that a ſecond begins before the firſt is perfectly ended, ſuch a fever will be called *continual*, becauſe it is never quite off; but, at the ſame time, it will alſo be called *remitting*, becauſe there is a remarkable remiſſion, which is in a ſhort time followed with a new paroxyſm. The ſame may alſo happen in a quotidian and a quartan.

Having now explained the various ſymptoms of fevers, we are next to treat of ſuch things as occur, and deſerve to be remarked in each.

Of Continual Fevees.

APH. DCCXXVIII.

THE moſt ſimple of continual fevers is the ephemera, or diary fever, which runs through all its ſtages, that is, begins, increaſes, comes to its height and declenſion within the ſpace of twenty-four hours. For its cauſes, it acknowledges only a more violent motion of the humours ariſing from an error in ſome of

the ſix non-naturaliſts, having hardly ever any matter for its cauſe. It is known from the ſlightneſs of its cauſe, from a good habit of body, the mildneſs of the ſymptoms, a quick criſis, the pulſe returning to its natural ſtate, immediately after the fever is off. The cure is eaſily performed by abſtinence, reſt, and dilution.

As an ephemera ariſes from an error in the uſe of the non-naturals, ſuch as a ſurfeit, drunken-fit, too much labour, violent paſſion of the mind, &c. it is evident that there is hardly any morbific matter to produce it; or if there is any, it may be ſoon and eaſily ſubdued by the fever, and expelled from the body. For this reaſon it is ſaid in the text, that matter is not the cauſe of it; yet if the error in the abuſe of non-naturals be great, a much longer and more dangerous fever may ariſe, as is evident from what was ſaid of the cauſes of fevers at Aph. 586. But as the ſymptoms attending an ephemera are always ſlight, the cure is eaſily effected by abſtinence, reſt, and dilution. Beſides, this ſimple method is uſeful in the beginning of all diſeaſes; and if another kind of fever ſhould follow inſtead of an ephemera, this method will never do harm.

APH. DCCXXIX.

IF an ephemera is protracted for ſeveral days, it is called a *continual, not putrid fever*; the cauſes, ſigns, and cure being the ſame, but it chiefly requires plentiful bleeding, and cooling medicines.

The ancients called this fever a *ſynochus non putris*, becauſe it is not attended with any ſigns which denote any great degeneration of the humours from their natural ſtate; but as the circulation of the blood is accellerated in a *ſynochus non putris*, and conſequently

ſequently an increaſe of heat, there is reaſon to fear a diſſipation of the more fluid parts of the blood, and a coheſion of the other particles, whence an inflammatory tenacity, (ſee Aph. 100, and 689) and all the conſequences of it, ſuch as inflammations of the viſcera, acrimony of the humours, &c. to prevent which, bleeding and cooling medicines are here recommended, by which the fever is often inſtantly ſuppreſſed, as Galen proves by ſome remarkable inſtances.

Of Continual Putrid Fevers.

APH. DCCXXX.

IT has been cuſtomary to call that continual fever a *putrid* ſynochus, which ariſes from cauſes ſomewhat greater than a ſimple inflammation; as an obſtruction of the viſcera, an obſtipation of the ſkin, and almoſt of all the capillary veſſels, but with an acrimony ſharper than in the preceding fever, and frequently of a particular kind.

By the term putrid, the ancient phyſicians did not mean ſuch a corruption as that which ariſes ſpontaneouſly in dead bodies; but only ſuch a degeneration of the humours from their healthy ſtate, either before the fever, or by the fever itſelf, as to become unfit for a free and eaſy circulation through the veſſels. This change of the humours which happens in continual fevers, inclines them to putrefaction properly ſo called: for it was demonſtrated at Aph. 80 and 84, that by heat and ſtagnation, as alſo by violent motion, the humours turn putreſcent; the acrid, red, and ſometimes fetid urine, the intolerable ſmell

ſmell of the inteſtinal feces, and the ſtinking ſweats, ſufficiently ſhew an incipient putrefaction at leaſt.

Simple inflammation, &c.] By ſimple inflammation, is here underſtood, when a phlegmon ſeizes ſome particular part from a topical cauſe, which, though the body is healthy in other reſpects, is often attended with a fever, for the reaſons given in the comment to Aph. 382. N°. 8. And likewiſe when inflammatory matter, depoſited in any particular part, occaſions a pluriſy, quinſey, phrenſy, or ſome other inflammatory diſeaſe, together with a fever; yet the fever attending theſe diſeaſes cannot be always properly called putrid, becauſe we do not find in all theſe diſeaſes, at leaſt in the beginning, a great degeneration of the fluids from their natutal ſtate. But if the whole maſs of blood, by an inflammatory lentor, becomes leſs pervious, and to paſs with difficulty through the narrow extremities of the arteries, it will begin to ſtop in the fine veſſels of the viſcera; hence will follow a violent attrition and heat, which are enumerated in the following aphoriſm, among the ſigns of a continual putrid fever.

But with an acrimony ſharper than, &c.] See what has been ſaid of acrimony at Aph. 586. But this acrimony is altogether of a particular kind, and cannot be reduced to any known kind of acrimony, manifeſting itſelf only by its effects, producing putrid fevers, and a wonderful change of the humours, even in the moſt healthy people.

APH. DCCXXXI.

THIS fever is known by a heat even uneaſy to the touch; by a pulſe not only feveriſh, but alſo unequal and irregular; from a thick, red, turbid urine, and crude without any ſediment; and from a hot ſanguine conſtitution, the age and habit of the patient.

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The putrid ſynochus, if diſtinguiſhed from one that is not putrid, and from an ephemera by the following ſigns.

By a heat even uneaſy to the touch.] Galen places the principal ſign of putrid fevers in their heat; for in other fevers, although great heat is perceived by the touch, yet it is ſoon overcome by the heat of the fingers, and ſoon after feels to be leſs; but in continual putrid fevers the heat frequently is mild in the beginning, but increaſing every moment, it excites an uneaſineſs to the touch, as if the heat came from a deep part of the body. Thoſe who have once felt this kind of pulſe, will be better able to diſcover this difference of heat, than to deſcribe it by words.

By a pulſe not only feveriſh, but alſo, &c.] By this ſign alſo a putrid ſynochus is diſtinguiſhed from an ephemera, and a ſimple ſynochus: for in theſe the pulſe is ſtrong, equal, and not much exceeding the quickneſs of an healthy pulſe; but in a putrid ſynochus, there is a greater quickneſs of the pulſe, tho' it is unequal both as to ſtrength and velocity. This inequality may proceed either from an inflammatory viſcidity of the blood, or from a particular acrimony wonderfully diſturbing the whole ſyſtem, whence great weakneſs, with a trembling of the pulſe, and other bad ſymptoms. But this inequality of the pulſe only may deceive one in the diagnoſis; for the ſame is obſerved in the cold fit of intermittents, and in and about the time of a criſis.

From a thick, red, &c.] The urine is a watery lixivium mixing with waſhing out of the blood every thing that is diſſolvable in water, and therefore affords the beſt ſign to know the condition and alterations of the blood, and other humours. And as there is in a putrid ſynochus a great depravity of the humours, there ought to appear a conſiderable change in the urine different from that in a ſtate of health. But healthy urine is clear, thin, and of a yellowiſh or ſtraw-colour, in which ſubſides a light, uniform, and

and white ſediment. In an ephemera and a ſynochus not putrid, the urine does not much depart from theſe conditions, except in a little higher colour, and ſometimes in a larger ſediment. When therefore the urine is ſo conditioned as deſcribed in the text, it is ſufficiently evident that it varies in all its qualities from healthy urine, being turbid, crude, and without ſediment; hence we may juſtly conclude, that the blood and humours have undergone a great alteration from their healthy ſtate; but ſee more of this at Aph. 734.

And from a hot ſanguine conſtitution, &c.] For in ſuch people there is a prediſpoſing cauſe, which, by meeting with an occaſional or accidental cauſe, ſuch as hot air, violent exerciſe, drinking too much wine, &c. may excite a continual putrid fever.

APH. DCCXXXII.

THIS putrid continual fever is diſtinguiſhed into three kinds, homotonous, keeping in the ſame degree of ſtrength; epacmaſtica, or anabatica, continually increaſing; and paracmaſtica, continually decreaſing.

This diviſion of continual fevers is given us by Galen; but that the fever continues, increaſes or decreaſes, is beſt known from the quickneſs of the pulſe, the heat, and from an increaſe or decreaſe of the ſymptoms.

APH. DCCXXXIII.

OF theſe, the firſt is curable, the ſecond is full of danger, and the third the leaſt of all.

APH.

APH. DCCXXXIV.

THIS fever (730) is thought to be more dangerous and fatal, as the pulſe is weaker, quicker, more unequal in ſtrength, more irregular as to time, and more intermitting in its ſtrokes, as the reſpiration is more difficult, frequent and ſhort, with a great motion of the pinnæ of the noſe; and the greater uneaſineſs or pain it cauſes about the vital viſcera, and the more irregular it is as to time; the more a ſenſe laſſitude and weakneſs is perceived, the toſſings of the body more frequent, and the oftener the patient lies upon his back, with his limbs extended; the more the reaſon and paſſions of the the mind are diſturbed, the appetite impaired, and the digeſtion difficult; the redder, thicker, and more turbid the urine is, and the leſs the ſediment; or, as it is thinner, more watery, leſs in quantity, and more difficultly retained; the more tremulous the motions of the muſcles, the more the patient ſtarts at the touch, plays with his fingers, and catches after ſomething about him; the more ſorrowful the eyes look, and the more moiſt with involuntary tears.

As the pulſe is weaker, quicker, &c.] The pulſe is a ſign of the particular condition of the heart, the quality, quantity, and motion of the blood, and alſo of the different ſtate of the arteries. But to preſage any thing certain from the pulſe, it is to be obſerved, that the motion of the artery is liable to many alterations, which do not proceed from the diſeaſe, but from the patient's age, ſex, temperature, paſſions of the mind, ſeaſon of the year, and particular con-

dition of the artery itſelf; for in children it is much quicker than in adults, but in old age ſlower. In fat people it is weaker than in thoſe who are lean. If the alteration of the pulſe proceeds from the diſeaſe as the cauſe, then the following rules take place.

Weaker.] For this denotes that the powers moving the blood are diminiſhed, or elſe that there is a deficiency of the quantity of fluid to be moved, whether from profuſe evacuations, or from the blood being accumulated in the obſtructed veſſels; but as the attenuation and coction of the febrile matter require a ſtrong circulatory motion, it is evident that a weakneſs of the pulſe is always a bad preſage; for if it is too ſtrong, it may be eaſily reduced by bleeding, and the remedies enumerated at Aph. 610; whereas it is often difficult to raiſe the vital powers, when they are too weak.

Quicker, more unequal, &c.] For ſo much the more does it deviate from the healthy pulſe, which is naturally ſlow and equal. Beſides, this is the pulſe of dying people, and therefore denotes that the ſprings of life are ſinking.

As the reſpiration is more difficult, frequent, &c.] Hippocrates relied ſo much upon the breathing, that that he derives more of his prognoſtics from it, than from the pulſe. The reſpiration is ſaid to be difficult, when it is performed with much labour, and always denotes that the lungs are not ſufficiently dilated, or that there is an impervioufneſs of the blood through them from the right to the left ventricle of the heart; or that the blood moves with great celerity through the pulmonary veſſels; or laſtly, that there is a conjunction of ſeveral or all of theſe cauſes. A pain or uneaſineſs about the vital viſcera, or adjacent parts, is alſo a bad ſign. Hence Hippocrates remarks, that a frequent reſpiration denotes pain or inflammation above the diaphragm; but an irregular reſpiration affords a fatal preſage; that is, when it is not continued in the ſame manner, but at one time

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is ſtrong, and at another time obſcure. To this alſo belongs a ſobbing reſpiration, ſuch as we frequently ſee in crying children; and he alſo condemns, in an acute diſeaſe, a mournful and groaning reſpiration; and likewiſe one that is hot and cold.

The more a ſenſe of laſſitude, or, &c.] Hippocrates obſerves, that ſpontaneous laſſitudes denote diſeaſes, and when there is a great laſſitude, eſpecially in the beginning of diſeaſes, an imperviouſneſs of the blood may be juſtly feared. See what has been ſaid of weakneſs in fevers at Aph. 660, & ſeq.

The toſſing of the body more frequent.] This is that reſtleſſneſs which obliges the patient to be continually changing his poſture, in order to relieve a moſt troubleſome anguiſh; and is always a very bad ſign, as uneaſineſs in ſupporting the diſeaſe is one of the beſt.

The patient lies upon his back, &c.] Hippocrates obſerves, that it is a good ſign when the patient lies in the ſame poſture which he is uſed to in health. The beſt poſture is on either ſide, with the arms, legs, and neck a little bent; for in this poſture lie moſt people in health. When therefore the patient lies ſtretched out upon his back, the poſition is that of a dead body, into which it naturally falls by its own weight, and therefore ſhews a total loſs of ſtrength.

The more the reaſon and paſſions of the mind are, &c.] The common people know this to be one of the worſt ſigns; for when the patient ſhews no further regard to his wife, children, or friends, every one gives him up as loſt. For this reaſon Hippocrates condemns a fierce anſwer from one of a mild diſpoſition, or has unuſual thoughts raiſed in his mind; for this denotes that the common ſenſory begins to be changed by the diſeaſe, upon which the reaſoning and paſſions of the mind depend.

The appetite impaired, and the, &c.] From theſe ſymptoms we know that the chylopoietic viſcera are injured

injured by the diſeaſe, and that the beſt aliments will nothing, if the patient has not ſtrength ſufficient to change them into his own nature.

The redder.] That redneſs of the urine is a ſign of heat, was obſerved before at Aph. 675. It was alſo proved at Aph. 675, that heat in fevers was owing to a violent attrition of the fluids againſt each other, and againſt the ſides of the veſſels; and therefore the greater the attrition, the redder the urine. All thoſe bad conſequences enumerated at Aph. 100, and 689, may be foreſeen, and particularly a degeneration of the humours into a putrid acrimony. Hence the reaſon is evident why Hippocrates ranks very red cloudy urine without a ſediment among the ſigns of a future delirium.

Thicker, and more turbid the urine, &c.] For, as we ſaid at Aph. 731, ſuch urine greatly recedes from its healthy condition, and therefore ſhews that a great alteration is made in the humours by the fever. But as the urine contains the water of the blood, with its ſalts, oil, and earth now rendered more acrid by attrition [a], it is evident that the urine muſt become thicker when it is highly ſaturated with theſe contents; and the higher the fever, the greater is the attrition and tendency of the ſalts and oils of the blood to a greater acrimony; and therefore the quantity of ſuch particles diſcharged from the body by urine ought to be ſo much the larger. But if all theſe particles are intimately united together in the urine, they make it of a more or leſs intenſe red, in proportion to the quantity of the oil intermixed after it becomes acrid: but if the contents of the urine are ſo great, or the proportion of its vehicle ſo ſmall, that the particles diſſolved in the urine cannot be equally ſuſpended, it will become turbid and opake ſooner or later, according to the different quantity and nature of the contents, and the greater or leſſer

[a] Boerhaave Inſtit. Med. §. 375.

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degree of cold to which it is expoſed. Thus by the winter's cold, the urine of healthy people becomes thick and turbid, but only by increaſing the heat it is rendered very thin and limpid. The ſame thing happens in hot weather, when the watery parts of the blood are diſſipated by ſweat, whereby the urine is rendered thus red and acrid, and ſometimes very quickly becomes turbid and opake; but upon pouring hot water into it, becomes pellucid. But when thoſe particles which can no longer be ſuſpended in the urine ſeparate from it; if they are ſpecifically lighter than the liquor in which they float, they ſooner or later fall to the bottom, according to their ſpecific gravities; but when they are of the ſame weight with that of the containing fluid, or if the coheſion of the parts of the fluid is greater than can be overcome by the receding particles, they will then remain ſuſpended, and the urine will continue turbid and opake. Such urine denotes a violent attrition, an abraſion of the ſolids, a depravity of the humours, and that the oils and ſalts of the blood are rendered very acrid, and therefore ſuch an urine is a dangerous ſign in continual putrid fevers.

But theſe turbid urines are either diſcharged at firſt turbid, or clear and ſoon after turn muddy, and continue in this ſtate. Hippocrates calls theſe urines ſubjugal, becauſe they are like thoſe of cattle, and deſcribes it in the wife of Philinus, who lay ill of a fever on the fourteenth day after lying in. "On the "eleventh day ſhe diſcharged a great quantity of "urine, which was thick and white; yet, after "ſtanding a long time, nothing ſubſided. In colour "and conſiſtence it was like that of cattle." But he condemns ſuch urines in all caſes, for they do not appear but in fevers attended with dangerous ſymptoms. In his aphoriſms he ſays, ſuch urines denote pains of the head, either preſent or to come; and in his prognoſtics, after ſaying that a thin yellow urine is a ſign of crudity, he adds, but thick urines are more

more fatal. But the worſt conſequences are to be feared, if the urine continues many days without depoſiting a ſediment; for if it ſubſides, we may hope for an happy event; as in the caſe of Pericles, epidem. 3. ægrot. 6. Such thick urines denote great crudity, and are therefore attended with certain danger in moſt acute diſeaſes; and in ſlighter, a long continuance of the diſeaſe, and a difficult criſis.

Or as it is thinner, more watery.] For ſuch urines denote thoſe parts of the humours to be retained in the body, which ought naturally to be evacuated by the urinary paſſages. This kind of urine is ſometimes obſerved, when the blood, rendered impervious by an inflammatory thickneſs, refuſes to mix with watery liquors, however plentifully taken; in which caſe, the liquors drank are immediately diſcharged by urine. See Aph. 712.

Leſs in quantity, and more, &c.] Urine little in quantity is alſo condemned; for it ſhews that the blood is deprived of its diluent vehicle; ſuch urine is commonly ſharp, and apt to excite a ſtranguary, or a troubleſome inclination to make water, from the quantity of acrid ſalts it contains. It is alſo a very bad ſign if the urine runs away unknown to the patient; for then the brain is conſiderably injured, for which reaſon it ſeldom appears, but in delirious. phrenitic, and comatous patients.

The more tremulous the motions of, &c.] For all theſe denote that the common ſenſory is injured; whence a delirium, convulſions, &c. are to be feared. (See more at Aph. 702, and under trembling in fevers at Aph. 627.) But Hippocrates is almoſt the only phyſician who has remarked this *ſtarting at the touch*; he calls it a flying from the phyſician's hand, and ſays it is a bad preſage. For when the phyſician applies his fingers to the patient's pulſe, he ſuddenly ſnatches away his hand, and if he is aſked why he does it, the anſwer is, he knows not. There ſeems here ſo great an irritability in the common ſenſory,

that the whole is disturbed, even from the slightest change of the nerves, and therefore convulsions are to be feared.

The more sorrowful the eyes.] The eyes usually afford some of the most certain signs in diseases; nor is this a wonder, as in healthy people they point out the various affections of the mind, and often the first attacks of diseases appear earliest in the eyes. Hippocrates knew how to presage a future delirium from the eyes, and it was not without reason that he pronounced, Oculi ut valent, ita totum corpus. It is one of the worst signs when the eyes lose their natural lustre, which depends upon a fulness of the vessels, and a continual supply of a very thin lymph, by which they are moistened and kept clean. Hence in dying people the eyes appear dry and dusty, from the want of this moistening lymph. The common people know this sign, by saying, that the eye-strings are broke, and that it is over with the patient. Hippocrates, for this reason, made it a bad and fatal sign "for the eyes to be drawn aside; for one to be "less than the other;—the white to be red, livid, "or interspersed with black veins; to be turned up-"ward, or to be prominent or hollow, &c."

Sometimes also it happens, that the patient's countenance is sorrowful, with or without tears, though the eyes do not appear dry or dusty; and if you ask what is the cause of this grief, he denies that he has any. This is one of the worst signs, which I have sometimes observed myself. But Hippocrates, among the bad signs, mentions, "the patient's sleeping with the "eye-lids open, so as to expose some of the white "of the eye, when this does not arise from a diarrhæa "or purge, nor the patient accustomed to sleep in "that manner."

Moist with involuntary tears.] These are the tears which so frequently appear in dying people. Hippocrates condemns tears without a cause; but if patients cry from hearing of their danger, or from see-

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ing thoſe who are dear to them, it is rather a good ſign, as they are then moved with the uſual paſſions of the mind. Hence, in another place, he pronounces voluntary tears a good ſign in acute diſeaſes, but involuntary a bad, not only in fevers, but likewiſe in other diſeaſes, except when they preſage a future criſis by a bleeding at the noſe, and the tears not attended with any bad ſigns. His words are, "in "thoſe who have an involuntary flux of tears in "acute, and eſpecially in ardent fevers, in them we "are to expect a bleeding from the noſe, provided "they have no other pernicious ſymptoms; for if "there are, they portend not an hæmorrhage, but "death."

Theſe are the principal ſigns which ſhew danger in continual putrid fevers, and the greater number there are of theſe bad ſigns, the more fatal the diſeaſe.

APH. DCCXXXV.

BUT when the patient is diſturbed in his ſleep, and awakes worſe after it; when the body is diſcoloured with purple or livid ſpots; when the hypochondria are tenſe and inflated, the patient generally dies.

When the patient is diſturbed in his ſleep, &c.] What miſchiefs enſue from want of ſleep, was ſaid before at Aph. 708, from which it is evident how much good may be expected from ſoft and quiet ſleep. But when it is difficult and diſturbed, the patient awakes in a fright; or if he lies in a profound ſleep, and upon waking finds no refreſhment, but rather an increaſed wearineſs; there are then but ſmall hopes. Hence Hippocrates lays down the following as an univerſal rule in practice: "When "ſleep occaſions pain or labour, it is a fatal ſign; but if it relieves, it is not ſo.

When the body is diſcoloured with purple, &c.] What an ill ſign ſuch eruptions are in diſeaſes, was demonſtrated at Aph. 723, where we treated of febrile eruptions. But theſe puſtules ought to be carefully diſtinguiſhed from thoſe of the ſcorbutic kind, which ſometimes appear in ſlight fevers, without any bad ſymptoms.

When the hypochondria are tenſe, &c.] Hippocrates was careful in obſerving the condition of the hypochondria, and from thence derives many prognoſtics, as well with reſpect to the patient's recovery, as death. "If the hypochondria is inflamed, unequally ſwelled, or painful, it is a ſign that the diſeaſe is of a malignant nature." But he more eſpecially condemns a diſtention of theſe parts from an inflammatory tumour, as it denotes the viſcera there ſeated to be very much injured, and either that ſudden death, or a dangerous ſuppuration is to be feared. He alſo remarks, that a tenſion of the hypochondrium on either ſide is ſometimes the ſign of a future hæmorrhage from the noſe; but then he obſerves, that ſuch a tenſion is without pain or inflammation. It is therefore evident that a tenſion of the hypochondria with pain is always bad, although ſometimes a ſalutary hæmorrhage from the noſe in the beginning may prevent the future miſchief.

APH. DCCXXXVI.

THE general method of cure before delivered at Aph. 598, is here to be varied according to variety of indications, the violence of the ſymptoms, the condition of the patient, and ſtage of the diſeaſe.

That this general method of curing fevers may be applied to particular caſes, one ought to know what functions are injured, and what morbid changes ariſe in

in the ſolids and fluids; for from thence ariſe the various indications of cure. In a putrid ſynochus the humours degenerate greatly from their healthy ſtate, ſometimes running into an inflammatory thickneſs, and ſometimes into a diſſolved ſtate; and therefore the diſeaſe ariſing from ſuch oppoſite cauſes requires a very different method of cure. See Aph. 730. For there are two kinds of Synochi, both of them continued, both of them corrupting the humours, and injuring the functions. The cure of the firſt conſiſts in bleeding, cooling glyſters, diluent and attenuating medicines, &c. Of the latter, in raiſing the languiſhing powers, and expelling the latent malignignity by ſweats, or at leaſt by a continued diaphoreſis. See Aph. 609 to 612.

But a difference in the cure will alſo ariſe from the different condition, age, ſex, and habit of the patient, &c. but of theſe we have treated largely in the comment to Aph. 602. and in thoſe relating to the cure of fevers in general, and of ſuch things as related to the different ſtages of fevers.

APH. DCCXXXVII.

THESE fevers were called *ſynochi* by the ancients, and *continentes* by the moderns, becauſe they have no remiſſion of their heat; but they called continual remittent fevers by the name of *ſynoches*, or continued, 727.

Of an Ardent Fever.

APH. DCCXXXVIII.

AMONGST theſe continual Fevers, the *cauſus*, or ardent fever, deſerves to be particularly conſidered, becauſe of its frequency, danger, and difficulty of cure.

This fever is called ardent, from the great heat that always attends it; but it has been cuſtomary in our days to give the name of *ardent* to continual remittents, attended with a burning heat, and the ſymptoms enumerated in the following aphoriſm. Galen ſays, that an exquiſite ardent fever ſtrictly keeps to all the ſigns of an exquiſite tertian, from which it differs only in not invading with a rigor or ſhivering, and in not coming to a perfect intermiſſion. For this reaſon he ranks an ardent fever not among the ſynochi or continent, but among the ſyneches or continual remittent fevers.

APH. DCCXXXIX.

THE chief ſymptoms of this fever are a heat almoſt burning to the touch, unequal in different parts, but the moſt ardent about the vital viſcera, (often more mild in the extremities, and even ſometimes a coldneſs there) the air itſelf breathed out being almoſt ſcorching; a dryneſs of the whole ſkin, noſtrils, mouth, and tongue; a thick, ſhort, and laborious reſpiration; a dry, yellow, black, parched, and rough tongue; inſatiable thirſt, ſometimes going

ing off ſuddenly; an averſion to food, a nauſea, and vomiting; an anxiety, reſtleſſneſs, and wearineſs; a ſlight cough, with a ſqueaking voice; a delirium, phrenſy, perpetual watchings, dozings, convulſions, and exacerbations of the fever on odd days.

A heat almoſt burning to the touch.] Aretæus ſays, that in an ardent fever the heat is moſt burning and ſharp, and that the patient covets to touch every thing that is cold; but this heat is rarely equally diffuſed throughout the whole body, except in the beginning; for it is a good ſign for the body to be equally warm and ſoft. But in ardent fevers there in a moſt intenſe heat about the vital viſcera, and a more mild towards the extremities, or even ſometimes a coldneſs; for as the febrile heat ariſes from the great motion of the humours from the heart, and the reſiſtance of the veſſels to the heart, thoſe reſiſtances will be increaſed, when the thinneſt fluids are diſſipated by heat, and the remaining maſs thickened, it is evident enough that the blood cannot be propelled to the extremities with due force, and in due quantity, and therefore the heat in theſe parts muſt be conſiderably leſs: and as the blood muſt circulate through the lungs, while life continues, from the right to the left ventricle of the heart with a rapid motion, being now rendered more denſe, will ſuffer a greater attrition in the pulmonary arteries, whence an intenſe heat in the lungs. The inſpired air will anon grow hot, and as it is expired through the mouth and noſtrils, will be offenſive by its heat, as if it came from a hot furnace; and Aretæus does not ſcruple to ſay, that thoſe who are ill of an ardent fever, *breathe out fire*.

A dryneſs of the whole ſkin, noſtrils, &c.] This is an effect of febrile heat, and ariſes from a diſſipation of the thin and watery parts of the blood,

by which the blood becoming impervious, and adhering in the larger veſſels, diſtends them ſo, as to compreſs the adjacent ſmaller veſſels, and therefore the ſkin appears rough and dry. For the ſame reaſon the eyes, noſe, mouth, and tongue are alſo dry.

A thick, ſhort, and laborious reſpiration.] There are three periods in reſpiration, namely, that of inſpiration, expiration, and the intermediate ſpace betwixt both. The thickneſs of the reſpiration reſpects the intermediate period; but the quickneſs and ſlowneſs belong properly to inſpiration and expiration. Therefore a thick and ſhort reſpiration denotes a quickneſs of inſpiration and expiration; a laborious reſpiration, difficulty, and trouble in performing theſe contrary motions. See Aph. 734. But as the lungs are in a manner parched up by the intenſe heat, the blood will meet with great difficulty in paſſing through the narrow extremities of the pulmonary artery, whence the patient breaths quick, and with ſo much labour, that he may receive the agreeable coolneſs of the inſpired air.

A dry, yellow, &c. tongue.] In a healthy perſon the tongue is always moiſt; but when there is an intenſe heat, it becomes dry and rough. For the exhaling veſſels placed in the ſurface of the tongue being deprived of their fluid, or being ſtuffed with impervious juices thruſt forward by the impulſe of the blood, will force out the extremities of theſe veſſels beyond the ſurface of the tongue, and form that foulneſs, which appears firſt yellow, then brown, and at laſt black; and if at the ſame time there is a great dryneſs the tongue will be rough and unequal, which is one of the worſt preſages, becauſe we thence know that the æſophagus, ſtomach, and inteſtines are in the ſame condition.

Inſatiable thirſt, &c.] Thirſt, as a febrile ſymptom, denotes an imperviouſneſs of the humours, or an acrimony, either ſaline, oily, bilious or alcaline, or elſe that putrid excrements are lodged in the firſt paſſages.

paſſages. But in ardent fevers, thirſt ariſes from a diſſipation of the thinneſt parts of the blood. When this intenſe thirſt goes off ſuddenly, it ſhews that the functions of the brain are injured, and is juſtly eſteemed one of the worſt ſigns. See Aph. 637.

An averſion to food, &c.] Bad fevers injure almoſt all the functions of the body at one and the ſame time; no wonder then that thoſe are depraved whoſe office it is to receive and digeſt the food. But all theſe ſymptoms more eſpecially attend ardent fevers, becauſe the humours ſo much incline to putrefaction from the intenſe heat; and above all the bile, as appears from the fætid ſmell of the mouth, ſtinking ſtools, &c. Hence the patient has an averſion to fiſh, fleſh, eggs, and the like, which ſpontaneouſly incline to putrefaction, and deſire nothing but water, and acid liquors.

An anxiety, reſtleſsneſs.] A difficult and laborious reſpiration always attends an ardent fever, and denotes a difficult circulation of the blood through the ſmalleſt extremities of the pulmonary artery, and, therefore, it will be alſo accompanied with anguiſh. See Aph. 631, & ſeq. where we treated upon anxiety in fevers.

Wearineſs.] The ſenſe of wearineſs in fevers ſhews that the humours are moved with a moſt rapid motion, or that the blood, being rendered impervious by an inflammatory thickneſs, paſſes with difficulty through the ultimate extremities of the arteries, as we ſaid before in the comment to Aph. 734.

A ſlight cough.] Which may proceed from a turgeſcence of the blood veſſels of the lungs diſtended with impervious blood, ſo as to compreſs the air veſſels, that their ſurfaces rub againſt each other; for then there will be ſuch a dry and irritating cough as we meet with in a peripneumony.

With a ſqueaking voice.] This is the ſhrill voice condemned by Hippocrates, and which Hollerius makes ſo fatal a ſign, that he aſſures us, he never knew

knew one recover who had this voice. It ſeems to proceed from a dryneſs of the fauces.

A delirium, phrenzy, &c.] For all theſe ſhew that the brain is injured.

And exacerbations of the fever, &c.] That ardent fevers have ſomething of the nature of intermittents, is evident from this, that when they are extended to a great length, they afterwards change to intermittents.

APH. DCCXL.

THE cauſe of an ardent fever is generally too much labour, long journies, the heat of the ſun, thirſt long endured, the uſe of heating, fermented liquors, ſharp ſpices, exceſſive venery, immoderate fatigue, more eſpecially in the ſummer, &c.

As the proximate cauſe of an ardent fever is a diſſipation of the more fluid and ſoft parts of the blood, producing inflammation, and great ſtrength of the vital powers, it is evident that the cauſes enumerated in the above aphoriſm are ſufficient to raiſe an ardent fever, even in the moſt healthy perſon. See Aph. 586 and 742.

APH. DCCLXI.

THE courſe of an ardent fever is as follows: it very often kills on the third or fourth day, and ſeldom exceeds the ſeventh, if it is a perfect *cauſus*; it is often ſolved by an hæmorrhage from the noſe, which if ſmall on the third or fourth day, is fatal; this may be foretold from a pain in the neck, a heavineſs in the temples,

ples, a dimneſs or miſt before the eyes, a labouring of the præcordia without a ſenſe of pain, involuntary tears without any other fatal ſign, a redneſs of the face, and an itching of the noſe; and this hæmorrhage is moſt ſalutary when it happens on a critical day; ſometimes the fever goes off on a critical day by vomiting, ſtool, ſweat, urine, or a thick expectoration. An acceſſion of the fever, on equal days, before the ſixth, is a very bad ſign; a black urine, thin, and ſmall in quantity, is, in this fever, fatal; a ſpitting of blood, and bloody urine are alſo fatal ſigns; a difficulty in ſwallowing is bad; a coldneſs of the extremities is one of the worſt ſymptoms; a redneſs and ſweating of the face is bad; a ſwelling under the ears, not coming to a ſuppuration, is fatal, and ſo is a violent flux of the bowels. When the fever is attended with a trembling, a delirium follows, and then death; it often turns to a peripneumony with a delirium; that which ariſes after ſevere gripes of the belly is of the worſt kind: it is ſolved critically by a rigor.

Since every fever, as we obſerved before, terminates either in death, health, or another diſeaſe, it will be of uſe to collect what obſervations the ancients have made concerning the various event of this dangerous fever, and what changes happen when it tends either to a good or bad end. For thence may be had the beſt prognoſis, and, at the ſame time, may be derived the curative indications.

It very often kills on the third or fourth day, &c.] As there are ſo many, and ſuch malignant ſymptoms (739) attending an ardent fever, it is no wonder, if nature being overcome, ſhould, in a little time,

time, ſink under the violence of the diſeaſe, and the patient expire. "For malignant fevers, and ſuch "as are attended with the worſt ſymptoms, kill on "the fourth day or ſooner;" but thoſe of a milder nature may be extended to the ſeventh, and, within this ſpace, is an exquiſite ardent fever, limited by Galen.

But the fourth day is often fatal, eſpecially if the exacerbations happen on equal days, for then they do not fall out upon the third, but upon the fourth day. "Thoſe fevers which are exaſperated on equal days, "come to a criſis on equal days; but thoſe whoſe "acceſſions happen on *unequal days*, terminate on "*unequal days*. But the firſt critical day of the pe-"riods terminating upon equal days is the 4th, 6th, "8th, 10th, 14th, &c. The firſt of thoſe that ter-"minate upon *unequal* days is the 3d, the 5th, 7th, "9th, the 11th, 17th, and 21ſt, &c." Hence Hippocrates remarks, that in violent, ardent fevers the ſymptoms were worſt on the 4th day, attended with cold ſweats, a coldneſs of the extremities, which continued livid and cold, and the patient, at the ſame time, without any ſenſe of thirſt. It is, therefore, evident, that the patient then was, as it were, in the agonies of death; and he obſerves further, that if he eſcapes that fit, he periſhes the next, namely on the 6th day. But another difference ariſes with reſpect to the 4th day, for frequently the fits which happen on *unequal* days appear before their uſual time; thus, after the fit of the firſt day, the patient ſeems to be a little relieved on the ſecond day; but then on the beginning of the third day, or towards the end of the ſecond, a new fit comes on, and then the third fit appearing ſtill ſooner, falls upon the fourth day, in the beginning of which the patient frequently expires; whence, in another place, Hippocrates makes this obſervation, "that if on the fourth day the pa-"tient has a fit like that of the third, he is in dan-"ger." Therefore, a violent, ardent fever ſeldom exceeds

exceeds the ſeventh day; but a mild one may remit, and run out to a greater length before it terminates either in death, another diſeaſe, or in health.

It is often ſolved by an hæmorrhage from the noſe, &c.] It is very probable that other hæmorrhages may be likewiſe of ſervice; as blood diſcharged by the hæmorrhoidal veins, or an eruption of the menſes; but a bleeding from the noſe is more frequent in ardent fevers, and the moſt ſalutary of all other evacuations, provided it be ſufficiently copious, for a few drops on the third or fourth day is a fatal ſign, and denotes that the violence of the fever is ſo great as to burſt the arteries in the noſe, and that the blood is ſo thick, that it immediately hardens by the contact of the air.

This may be foretold by a pain in the neck.] This pain is not very acute, but ſomewhat obtuſe with a ſenſe of tenſion; whence in the Coan prognoſtics we are told, "that thoſe who have a heavineſs in their "head, and a pain in the ſinciput, with watchings, "are to have a flux of blood, if there is a pain in "the neck, and adjacent parts:" and, in another place, "if there is a tenſion in the neck;" and again, "that pains in the neck, and very red eyes, "ſignify an erruption of blood." This ought to be diſtinguiſhed, for a very acute pain in the neck often preſages a tetanos and convulſions. But this tenſion of the neck more certainly preſages a bleeding from the noſe, if it is attended with the ſigns following, or with only ſome of them.

A heavineſs in the temples, and dimneſs, &c.] For all theſe ſigns ſhew, that the impetus of the blood is determined towards the head, and, that by the burſting of an artery in the noſe, an hæmorrhage may follow. But although, at the ſame time, the brain being compreſſed by the quantity and impetus of the blood, a delirium, convulſions, and other bad ſymptoms may be feared, unleſs they are prevented by a ſudden hæmorrhage; yet a faithful obſervation has taught

taught us, that if all, or ſeveral of theſe ſigns happen, we need not fear theſe bad conſequences, but expect an hæmorrhage that will prevent them all. For the ancient phyſicians depended upon theſe ſymptoms as certain ſigns of an approaching hæmorrhage, when they appeared at a proper time, and did not ariſe from malignity in the fever, but from an irritation, or effort of nature, to effect a criſis. Hence theſe ſigns were always ſuſpected if they appeared in the beginning of acute diſeaſes, before there were any ſigns of coction. To theſe ſigns we may add, that preſaging a future bleeding from the noſe, taken from the pulſe only by the Spaniſh phyſician Dr. Solano. This he calls the rebounding pulſe, which ſeems to be that ſort of pulſe which the ancient phyſicians call *dicrotos* or double, when the artery in its dilatation ſtricks the fingers twice, before the contraction, or ſyſtole follows.

And this hæmorrhage is moſt ſalutary when, &c.] In the comment to Aph. 587, it was proved, by many arguments, that criſis happen in fevers; but as our comment there ran out to a great length, I deferred treating on critical days to the opportunity given us in this aphoriſm, wherein they are mentioned.

The ancient phyſicians carefully remarked thoſe changes which happened every day in diſeaſes, and diſcovering that the moſt conſiderable changes and evacuations, which either precede, accompany, or follow a criſis, happen on this or that day of the diſeaſe, they thence called thoſe days *duretory* or *critical*. But Galen obſerves, that "although criſes "ſometimes happen on all days, yet they are not equal "in number on all days, nor equally to be relied "on." Whence it appears, that the ancients only called thoſe days critical, on which the greateſt number, and the moſt perfect criſes happened. Hence, the ſeventh day was eſteemed the principal critical day; and Galen declares, that he could not number all the diſeaſes which he had ſeen come to

a criſis

a criſis on that day. Nor ought theſe critical days to be remarked merely becauſe there is a ſudden alteration for the better; but alſo becauſe, in the moſt dangerous diſeaſes, the patient dies upon theſe days, or ſome great alteration happens for the worſe. Hence Hippocrates tells us, "that fevers come to a "criſis on the ſame days whereon people either ex-"pire, or begin to recover."

Nor is it any objection to this, that ſometimes, in the moſt dangerous fevers, the face of things are ſo diſturbed, that one can hardly perceive any thing regular throughout the whole, and that nature, being overcome, ſhould ſink under it after a ſhorter or longer conflict. For in treating of a criſis at Aph. 587, we obſerved, that criſes do not happen in all fevers. Thus, in the ardent fevers deſcribed by Hippocrates, there was no critical ſign, no ſalutary bleeding from the noſe, nor any other diſcharge that is uſually critical; but that they all died ſooner or later, and for the moſt part about the critical times.

The legitimate, critical days are the 4th, 7th, 11th, 14th, 17th and 21ſt, and hæmorrhages happening upon theſe days are moſt ſalutary; for when they happen on incidental, critical days, as the 3d, 5th, 6th, or 9th, they are leſs ſalutary; but thoſe which happen on other days are altogether to be ſuſpected, and the ſame will alſo hold true of the other critical evacuations.

It may perhaps be objected, that an evacuation of the morbific matter at any period of a fever is always ſalutary; and that, therefore, the obſervation of critical days is of no uſe. But we have ſhewn, that there is a material cauſe in all fevers which is beſt ſubdued and attenuated by the fever itſelf, ſo moderated, as to be neither too high nor too low; and that this change of the morbid matter, requires a determinate time to be concocted and prepared for expulſion. Beſides, this concoction or ſeparation of the morbid from the healthy humours is the work of

nature

nature only. For when a painful phlegmon ſeizes any part of the body, it is not in the power of the moſt dextrous anatomiſt to ſeparate the obſtructed veſſels without injuring the ſound parts; yet nature, by a mild ſuppuration, performs this ſeparation in a determinate ſpace of time. As, therefore, it is improper to open a phlegmon before matter is completely formed, ſo likewiſe evacuations in fevers, before nature has ſeparated the morbid from the healthy humours, can hardly be of ſervice; either becauſe they remove only part of the morbific matter, or elſe evacuate the healthy as well as the morbid humours. How dangerous it is to attempt a ſeparation of the morbific matter before the due time, appears evidently from the ſmall-pox, wherein the critical days of the ancients are in no fever more regularly obſerved than in this. For on the fourth day, the matter of the diſeaſe is critically depoſited on the ſurface of the body, the fever then abates, and all the ſymptoms not only leſſen, but frequently diſappear.

From all this, I believe it is evident, that in fevers certain intervals of time are to be obſerved, and that a careful obſervation of them is of great uſe in the cure of fevers, leſt we ſhould do miſchief by unſeaſonable aſſiſtance from art. At the ſame time we learn, that all evacuations, or conſiderable alterations that happen at other times, are not to be truſted, becauſe they are ſeldom ſafe, or generally alter the diſeaſe for the worſe.

But thoſe critical days on which criſes moſt frequently happened were alſo called, by the ancient phyſicians, *indicating* days, as they point out what may be expected the next critical day, if the criſis does not happen upon them. For while nature is employed in this work, there are certain changes happen, eſpecially in the urine, by which we know, that the febrile matter is now leſs offenſive. Theſe changes are called ſigns of concoction, and are always good preſages

ſages in diſeaſes, upon whatever day they may happen.

But critical days were obſerved by the ancient phyſicians, not only becauſe criſes happened upon them, but alſo becauſe the changes obſerved on thoſe days point out what will happen on the following critical days. For this reaſon Hippocrates tells us, "that the fourth day is the index of the ſeventh; "the eighth, the beginning of the week following; "but the eleventh day is alſo to be conſidered, be- "cauſe it is the fourth of the ſecond week; and, "again, the ſeventeenth day is to be remarked, for "that is the fourth from the fourteenth, and the "ſeventh from the eleventh." Hence it is manifeſt, that every one of the critical days is an index of the critical day next following; thus, the fourth day may be an index to the ſeventh, and the ſeventh to the eleventh, &c. For this reaſon Hippocrates ſays, "When a criſis is to happen on the ſeventh day, "there is a nubecula in the urine on the fourth, and "all other circumſtances favourable." This is, at leaſt, a ſign of concoction begun; but when theſe ſigns do not appear on the fourth day, and the fever is attended with malignant ſymptoms, it is to be feared that a bad criſis, or death, will happen on the fourth day, unleſs the diſeaſe is very acute, and the fits happen on *equal* days; for then ſometimes the patient dies on the ſixth day, though it was indicated on the fourth, as Galen obſerves. Otherwiſe he affirms, that the fourth day is, of its own nature, an index to the ſeventh, and that he knew this from obſervation in acute diſeaſes.

But the practical rules, relating to indicating days, ſeem fairly confirmed by the caſes deſcribed in the epidemics of Hippocrates. Thus Silenus had, on the fourth day, all the ſigns that were bad, whence there was reaſon to fear a bad criſis on the ſeventh. Yet he did not die on the ſeventh, but lay ſpeechleſs and cold, and made no urine; but as the ſeventh

day is an index of the eleventh, all the bad ſymptoms were increaſed on that day, and therefore death was to be expected, which indeed happened. Epidem. 1. Ægrot. 1. In another caſe he remarks, that all the ſymptoms were exaſperated on the ſeventh day, and that the patient alſo expired on the next critical day, that is upon the eleventh. Ib. Ægrot. 12. Thus alſo the eighth, tenth, and eleventh the patient had the very worſt ſigns on the fourth day, and expired on the ſeventh. Epidem. 3. For although it ſometimes happens that people of a ſtrong habit, and in the flower of their age eſcape, both on the indicating and critical day, yet this very rarely happens; and then, unleſs the diſeaſe changes for the better, they expire on ſome other critical day. Thus it happened to the woman who lay ill in the market-place of the Mendæ. All the ſymptoms were bad from the beginning, but on the fourth day were exaſperated. On the ſeventh there were great reſtleſſneſs, cold ſweats, &c. which ſeemed to indicate death on the eleventh day, yet ſhe ſurvived that day, though there were bilious vomitings, a coldneſs of the extremities, and other malignant ſymptoms. On the following days every thing was changed for the worſe, and on the fourteenth day ſhe expired, even though an hæmorrhage from the noſe happened the ſame day, which nature had hitherto attempted in vain. Epidem. 2. Ægrot. 12. That ſometimes the fourth day is an index to the ſixth day, we are taught by the caſe of Philiſcus, who had all the ſymptoms exaſperated on the fourth day, with black urine, yet he expired not on the ſeventh but on the ſixth day. But Hippocrates obſerves, that the paroxyſms were upon *equal* days; hence appears the reaſon why he died rather on the ſixth than the ſeventh day. Epidem. 1. Ægrot. 1.

From all that has been ſaid, it is evident that the obſervation of critical and indicating times in diſeaſes is of the greateſt uſe, though there is no mathematical certainty

certainty in it; for which reaſon the ancient phyſicians were cautious in their preſages, inſomuch, that although they could foreſee death, they ſeldom pronounced the patient's caſe entirely paſt help, hoping that ſomething might be done for them to the laſt. But they are certainly in an error who imagine that the obſervation of indicating and critical days are uſeleſs, becauſe in ſome uncommon caſes the events do not perfectly anſwer to the preſages made by the phyſician from the doctrine of theſe days.

But it is not to be imagined, that in the cure of diſeaſes it is ſufficient for the phyſician to obſerve the days in order to make a preſage, and commit all the reſt to nature. For to cure a fever, the morbific matter muſt be ſubdued, concocted, and rendered moveable, and fit for expulſion, by a due moderation of the fever. Nor is this all; but when there is reaſon to expect a future bad criſis, art muſt interpoſe to prevent it. This was the method followed by Sydenham, who always endeavoured to keep the fever under a due regulation, that is, by depreſſing it when too violent, and raiſing it when too languid, eſpecially towards the end, and by the uſe of cordials promoting the critical ſeparation and expulſion of the morbific matter; ſo that this great phyſician was not an idle ſpectator, but a diligent ſervant of nature. For a prudent uſe of ſuch means as ſerve to moderate the fever, can never diſturb the order of criſes and critical days. I have ſeen a copious bleeding from the noſe on the ſeventh day of the fever, even after the patient had been bled twice before.

Sometimes the fever goes off on a critical day, &c.] All evacuations on critical days are beneficial; but every vomiting and purging is not; but only that which happens after the ſigns of concoction, and upon a critical day, with great relief to the patient; for violent vomitings on other days are ſigns of malignity, and a profuſe diarrhæa in ardent fevers is fatal. See Aph. 594, N°. 2 & 739.

Sweat.] If it is warm, copious, and equally diffuſed throughout the whole body, and on a critical day.

Urine.] Although by the urinary paſſages acrimonious humours are carried off, yet the matter of the diſeaſe very rarely eſcapes this way only, without the aſſiſtance of ſome other evacuation. Hippocrates remarks, that a laudable and copious ſediment, a bleeding from the noſe, and bilious ſtools, or a dyſentery, were the evacuations which preſerved thoſe who were ſeized with an epidemical ardent fever, and that they were not cured by one only, but by ſeveral of theſe evacuations happening at the ſame time; hence a laudable ſediment in the urine is rather to be eſteemed a ſign of concoction, than a cure.

Or a thick expectoration.] As an ardent fever ariſes from too great a thickneſs of the blood, it will be apt to ſtop in the capillary arteries, by which thoſe of the lungs will ſoon be ſtuffed up and obſtructed with impervious blood; when, therefore, this fever inclines to health, and a ſpitting comes on, we are certain that the impervious parts of the blood obſtructing the pulmonary veſſels, begin to be looſened and diſſolved. But an ardent fever is ſeldom or never critically ſolved by a ſpitting alone.

An acceſſion of the fever on equal days, before the ſixth, is a very bad ſign.] This is founded upon the obſervations of Hippocrates, who condemns criſes on equal days, as they are either bad, or at leaſt imperfect; for all the ſymptoms are worſt upon the fourth, and the patient generally dies on the ſixth day, as was before obſerved.

A black urine, thin and ſmall in, &c.] Hippocrates condemns black urine; and Galen affirms, that he never ſaw any recover who voided ſuch urine. But he thinks it leſs dangerous when only the ſediment is black, and ſtill much leſs when only a black cloud appears. Urine, uniformly black, and fetid at the ſame time, is abſolutely fatal; but if it is alſo thin,

thin, and ſmall in quantity, the danger is increaſed, as it denotes a gangrenous diſpoſition of the humours.

In ſuppreſſions of the *lochia*, a great quantity of black urine is ſalutary: and, in the epidemics, there are ſeveral inſtances of patients who made thin and black urine, and yet recovered, ſo that black urine is not always fatal. Epidem. 3. Ægrot. 9, 10, 11, & Epidem. 1. Ægrot. 7.

A ſpitting of blood, and bloody urine, are alſo fatal.] For theſe denote that the impetus of the blood is ſo great as to rupture the veſſels; and when the rupture happens in the pulmonary veſſels the danger muſt ſtill be greater. But bloody urine may perhaps ariſe from the ſaline and oily particles of the blood, rendered ſo highly acrid by the violence of the fever, as to erode the blood veſſels of the kidnies, and, therefore, ſhews the very worſt degeneration of the humours. Beſides, thoſe hæmorrhages are never critical, like that from the noſe.

A difficulty in ſwallowing is bad.] Becauſe it denotes a very great dryneſs of the organs of deglutition, and even ſometimes an inflammation of them. Hence Hippocrates obſerves, "that a ſenſe of ſuffo-"cation, and an inability to ſwallow, are bad ſigns "in fevers."

A coldneſs of the extremities is, &c.] When the extreme parts no more recover their heat, or at leaſt continue cold for a long time, we are then certain that the blood is ſo thickened by heat, that it cannot be propelled to the extremities, but continues to be moved only through the larger veſſels. But this coldneſs ſometimes continues ſo long, that frequently the parts no more recover their heat, as happened to Philiſcus, Silenus, and others, who all periſhed.

A redneſs and ſweating of the face is bad.] A warm ſweat, equally diffuſed, is one of the beſt ſigns; but we here mean that obſerved in the face and head, which frequently happens in dying people, and ga-

thering into drops adhere to the ſkin. See Aph. 594, N°. 2. In fact, all partial practical ſweats are bad.

A ſwelling under the ear not coming to a, &c.] Fevers are ſometimes ſolved by parotid ſwellings under the ears, when they come to a kindly ſuppuration; for the febrile matter is ſometimes critically depoſited upon theſe glands. But theſe ſwellings often diſappear ſuddenly, the morbific matter returning again into the blood, whence relapſes, and even death itſelf; for, as we obſerved before, critical ſigns, which do not terminate the diſeaſe, are, in ſome meaſure, fatal, or render the criſis more difficult; as they denote that the efforts of nature have been exerted to no purpoſe, which is one of the worſt ſigns; unleſs abſceſſes of the like kind appear in other parts of the body, or the matter of the diſeaſe be thrown off by other critical evacuations, as Hippocrates has well obſerved in his Coacæ Prænotiones, N°. 207. But a ſuppuration of parotid ſwellings is not always a certain ſign of recovery; for Hippocrates remarks that, in two patients, theſe glands ſuppurated, and yet they periſhed. The truth of this is alſo confirmed by other obſervations.

And ſo is a violent flux of the bowels.] We here mean that flux which is ſymptomatical and very profuſe; for a critical flux often cures an ardent fever. But when a great quantity of humours is carried off by ſtool, before there are any ſigns of concoction, the ſtrength may be ſo reduced as to prove fatal to the patient in the end. See Aph. 386, 590, 720.

When the fever is attended with a trembling, &c.] When we treated of a febrile trembling at Aph. 627, it appeared, that the cauſe of theſe tremors was an impervioufneſs of the fluids through the arteries of the encephalon. But as the more fluid parts of the blood are diſſipated in an ardent fever, and the reſt thickened by heat, it is evident why tremors happen. But if they are followed with a delirium, we know

know that from the ſame cauſe the whole common ſenſory is diſturbed, and, conſequently, that there is the greateſt danger of death.

It often turns to a peripneumony, &c.] Hippocrates pronounces a concourſe of theſe two to be a fatal ſign, when he ſays, "A difficulty of breathing, "and a delirium attending a fever that is not inter-"mitting, are fatal." Aph. 50. Sect. 4. But ſee what has bean ſaid before at Aph. 739.

That which ariſes after ſevere gripes, &c.] For this denotes that the inteſtines and meſentery are inflamed, and that a gangrene may ſoon follow. Hence the reaſon is plain why Hippocrates condemns violent pains about the viſcera in acute fevers.

It is ſolved critically by a rigor.] Hippocrates obſerved, that an ardent fever was ſolved by a rigor; but it is not every rigor that will do this, but only that which reſtores a free and eaſy circulation of the humours through the veſſels. For upon every acceſſion of the fever, either upon *equal* or *unequal* days, a rigor attends, but then it is much ſlighter than that which is critical. Beſides, this ſalutary rigor muſt happen after the ſigns of concoction, and on a critical day, and muſt alſo be preceded, or ſoon followed, with critical evacuations. Thus a profuſe hæmorrhage from the noſe is frequently followed with ſuch a critical rigor, which alarms the patient with vain fears of death, when, at the ſame time, it paves the way to health. For by this profuſe diſcharge of the arterial blood, the preſſure againſt the extremeties of the obſtructed arteries is ſo much leſſened, that the inflammation is reſolved by a retropulſion of the inflamed particles. See Aph. 400, N°. 1. But the time of the rigor ought alſo to be obſerved in order to eſtabliſh a juſt prognoſis; for thoſe which happen on the ſixth day make the criſis doubtful or difficult, as appears from what was ſaid of critical days.

But a rigor may ariſe from fatal cauſes; for when the impervious blood cannot be propelled to the ex-

treme parts, a rigor follows, with a coldneſs, which is a very bad ſign in an ardent fever. Such rigors are condemned by Hippocrates, when he ſays, "A "coldneſs of the parts, not recovering their heat "from a rigor, is of dangerous conſequence." The woman, who lay ill in the Mendæan market, had ſuch a kind of rigor, and therefore periſhed.

APH. DCCXLII.

THESE particulars being explained, it will not be difficult to know an ardent fever; nor will there be any room to doubt of its proximate cauſe: for it ariſes from a diſſipation of the thinner and milder parts of the blood, by an inflammation throughout the whole body, while the patient was in full ſtrength of body; hence alſo may be deduced ſure prognoſtics of its future event.

APH. DCCXLIII.

THE cure of an ardent fever requires a pure, cool air, and frequently renewed; bed-cloaths which neither ſtifle nor load the patient; to ſit often in an erect poſture; the drink to be plentiful, mild, demulcent, ſubacid, watery, and drank warm; the food to be light and mealy, made from barley, oats, and tart fruits; bleeding in the beginning, if there are ſigns of a plethora, and a particular inflammation; if the heat is intolerable, the rarefaction of the fluids too great, if a revulſion is neceſſary, the ſymptoms urgent, and cannot be removed by any other remedy; the repeated uſe of mild, diluent, opening, antiphlogiſtic,

giſtic, and cooling glyſters, as the degree of heat, coſtiveneſs, and revulſion indicate; the moiſtening of the body, by breathing a cool air replete with the ſteams of warm water; by waſhing the mouth and throat, bathing the hands and feet in water juſt warm; by fomenting thoſe parts where the greateſt number of veſſels lie expoſed to the touch; the uſe of watery, mild, nitrous, and agreeably tart medicines, and ſuch as gently looſen the belly, ſupply matter for the urine and afford a vehicle for the ſweat, but without any acrimony; and ſuch as relax the contracted fibres, reſolve and dilute inſpiſſated humours, and blunt their acrimony.

A pure cool air, &c.] This is ſo neceſſary, that without it all other means are ineffectual; for the heat in an ardent fever is ſo great about the vital viſcera, as to fear it ſhould coagulate the blood, and cauſe it to ſtagnate in the ſmalleſt pulmonary arteries, whence a fatal peripneumony. See Aph. 689.

Bed-cloaths which neither ſtifle, nor, &c.] For by keeping the body too warm, the very intenſe heat will be further increaſed. But ſee Aph. 605. N°. 2.

To ſit in an erect poſture.] For by this means a delirium may be either prevented or abated. See more in Aph. 610.

The drink to be plentiful, mild, &c.] In order to ſupply the watery parts of the blood, which are continually diſſipated by the intenſe heat and dryneſs which always attends this fever, and to prevent the humours from degenerating into a putrid acrimony, which is always to be feared in ardent fevers.

The food to be light and mealy, &c.] We have already directed every thing relating to the quantity and quality of the food, and of the time proper for it to be given in the comment to Aph. 599 to 602.

Bleeding in the beginning, &c.] This ſeems always uſeful, in an ardent fever, to abate the heat and impetus of the fever; yet great caution is ſometimes required in the uſe of it. For when the blood begins to be impervious, and adhere in the capillary veſſels of the vital viſcera, there is indeed a burning heat about the præcordia, but at the ſame time a coldneſs in the extremities. In this caſe, phlebotomy will rather occaſion the death than the recovery of the patient. But if there are certain ſigns indicating the danger of phlebotomy, and in the mean time ſuch urgent ſymptoms ariſe as cannot be removed by any other remedy; as pleuritic pains, a burning heat in the head, and quinſey, then the lancet may be uſed, to prevent, if poſſible, the fatal conſequences of theſe inflammations.

The repeated uſe of mild, diluent, and glyſters.] Theſe are of great uſe to waſh out the putrid fæces from the large inteſtines, to foment the parts, and to make revulſion from the ſuperior. Beſides, the diluent antiphlogiſtic liquors injected, will be abſorbed by the the meſeraic veins, and mixed with the blood, which will by this means be diluted and attenuated; and alſo obſtructions and inflammations of the liver prevented, which the intenſe heat in this fever is very apt to produce. The moſt emollient glyſters only are to be uſed, as the intention is to dilute and relax; for acrid ones would occaſion a teneſmus, and ſoon be rejected. Water only, with oxymel and nitre, will ſuffice for this purpoſe, or thoſe may be added to emollient decoctions. Such glyſters ought to be injected three or four times a day, retained as long as poſſible, and continued till the internal heat and dryneſs abate; but when theſe abate, they muſt be laid aſide, for fear of weakening the body, and thereby prevent the fever from ſubduing and expelling the morbific cauſe.

The moiſtening of the body, &c.] Theſe applications were greatly depended upon by the ancient phyſicians,

phyſicians, who mitigated the worſt ſymptoms of an ardent fever by the uſe of them: for by all theſe means the internal and external parts of the body were prepared to make thoſe critical evacuations which happily terminate an ardent fever.

The uſe of watery, mild, nitrous, &c.] All theſe things are extremely uſeful, both as drinks and medicines. Nitre is added, as it is the lighteſt of all ſalts, and the beſt reſolvent of inflammatory thickneſs in the humours. Half a dram, or more, diſſolved in a pint of theſe drinks will ſuffice; for if given in too great a quantity, it may increaſe the motion of the humours by its ſaline ſtimulus. It is alſo the property of theſe medicines to looſen the bowels, which is always of ſervice in this fever.

But as an ardent fever is frequently ſolved by a bleeding from the noſe, and as this bleeding is ſometimes ſo profuſe as to endanger the patient's life, I ſhall here add the proper method of ſuppreſſing it, having already treated of the cure of the other critical evacuations under the ſymptoms of fevers. Bleeding has been recommended in this caſe, but it is hardly ever proper, and Sydenham laid no ſtreſs upon it. Ligatures to the limbs, ſo as to compreſs the veins, but not the arteries, have been found uſeful; for by theſe the return of the blood towards the heart is retarded, and time given to the arteries to contract themſelves by their own elaſtic force. Galen recommends the application of large cupping-glaſſes to the hypochondria, to the right, when the right noſtril bleeds, &c. contra.

Sydenham ſtilled the too great impetus of the blood by anodynes; and then by giving a purge, prevented the return of the bleeding; and when this ſymptom attended, he gave purges in fevers ſooner than he otherwiſe uſed.

But in this caſe I have always uſed a ſolution of white vitriol, which has never as yet failed me. A tent moiſtened in that liquor, and thruſt up the noſe as

as far as poſſible, effectually ſtops this bleeding. It muſt be left in the noſe for a day or two, or till it falls out of itſelf.

In the mean time, care muſt be taken not to ſuppreſs the hæmorrhage too ſoon. While the pulſe continues full, the extremities warm, and a red colour appears in the face and lips, there is no danger; but when the pulſe begins to fluctuate, the face turns pale, and the veins collapſe, the bleeding ought then to be ſuppreſſed. It frequently happens, that a ſudden and profuſe hæmorrhage from the noſe is followed with a fainting, and then ſtops; nature performing that which is imitated by art in the cure of acute diſeaſes, when blood is taken away till the patient faints.

APH. DCCXLIV.

TO theſe, if one adds what has been ſaid under the general rules for the cure of acute fevers and their ſymptoms, and what is to follow of ſuch acute fever as threaten the deſtruction of ſome particular viſcus, he will clearly perceive all the remedies that are neceſſary for the cure of any ardent fever.

We have enumerated, in the preceding aphoriſm, ſuch things as chiefly regard the cure of an ardent fever; the reſt have been already treated of under the cure of fevers in general.

APH. DCCXLV.

BESIDES, the remaining particular acute fevers, which do but rarely occur, may be underſtood from what has been hitherto ſaid; or they may be referred to ſome particular ſymptom,

tom, or are the effects of ſome other acute diſeaſe.

For we firſt treated of thoſe fevers which run through their periods without any intermiſſion, as the *ſynochi*, which were diſtinguiſhed into putrid and not putrid; but when ſuch a fever terminates within the ſpace of twenty-four hours, it is called an ephemera. It is therefore evident, that all continual fevers may be reduced to theſe three claſſes: but if any of the viſcera are at the ſame time inflamed, it then belongs to ſome of the inflammatory diſeaſes, concerning which we ſhall treat hereafter. But as an ardent fever is one of the worſt kind of thoſe which have no intermiſſion, but only fits of remiſſion and exacerbation, it evident that the cure of an ardent fever will direct us to the cure of one of the like kind, which is not attended with ſo many and ſo ſevere ſymptoms. All the other different kinds of fevers to be met with in authors, are uſually taken from ſome troubleſome ſymptom which attends them, as aſodes from a continual nauſea and anxiety, and epiala from a continual rigor, &c. Here the difference of the cure ariſes from the ſymptom, from which they derive their name. But when a particular acute fever attends ſome inflammatory diſeaſe, or follows from it as the cauſe, it is evident enough, that the cure muſt depend upon a knowledge of that diſeaſe. Nothing therefore remains to complete the hiſtory and cure of fevers, but to add ſomething concerning intermittents.

Of

Of Intermitting Fevers.

APH. DCCXLVI.

THE definition of an intermitting fever was given at Aph. 727; the diagnoſis is ſelf evident, and the diſtinction of it into various claſſes is eaſy, as it depends only upon the different times which intervene between each paroxyſm; but ſometimes an exquiſite ſeptenary intermittent happens, as I have myſelf ſeen.

Quotidian, tertian, and quartan fevers are frequent; but thoſe which have a longer interval between each paroxyſm are very rare. Yet Hippocrates takes notice of fevers returning every fifth, ſeventh, and ninth day. Schultzius and Amatus Luſitanus have collected many ſuch obſervations.

APH. DCCXLVII.

IT muſt however be obſerved, that intermitting fevers in general are either *vernal*, invading from February to Auguſt, or *autumnal*, which prevail from Auguſt to February again. This diſtinction is neceſſary on account of their various natures, ſymptoms, duration, events, and cure; beſides one intermittent drives away another.

Vernal or autumnal.] For though theſe fevers bear the ſame name, and keep the ſame periods, yet they differ greatly both in the ſymptoms and in the cure.

cure. Hence Sydenham was perſuaded that vernal and autumnal fevers differed from one another, even eſſentially in their own nature; and affirms that nothing certain can be laid down in regard to the prognoſis and cure, without attending to this difference. Beſides, vernal intermittents are always ſalutary, and ſeldom of long duration, even though they are treated improperly; but autumnal intermittents are often not without danger, and frequently prove fatal to thoſe who are advanced in years, or are of a bad habit of body.

APH. DCCXLVIII.

MOreover, intermitting fevers, in the beginning of autumn, frequently put on the appearance of continuals, on account of the length and reduplication of their fits; when at the ſame time their nature and cure are widely different.

Celſus obſerved the ſame, when he ſays, "that "the fits of intermittents are ſometimes ſo irregular, "that neither their durations nor intermiſſions can "be obſerved." In this ſtate the patient is never free from the fever, and is often miſtaken by the unſkilful for a *continual* fever, and treated in the ſame manner. It is of great importance in practice to be able to make this diſtinction, becauſe neither bleeding nor other weakening remedies are uſeful in theſe fevers which belong to the tribe of intermittents, tho' they put on the face of *continuals*. Sydenham ſcrupled not to give the bark in theſe fevers, and with very good ſucceſs, which yet in continual fevers is of no uſe.

APH.

APH. DCCXLIX.

INtermittents begin with a yawning, ſtretching, a wearineſs, weakneſs, coldneſs, trembling, ſhivering, and paleneſs of the extremities, a difficult reſpiration, an anxiety, a nauſea, vomiting, a quick, weak, and ſlow pulſe, with intenſe thirſt. The more violent and numerous theſe ſymptoms are, the worſe the fever; and afterwards the heat and all the other ſymptoms increaſe. This is the firſt ſtage of an intermitting fever, anſwering to the increaſe of a *continual*, and is much more dangerous than the other ſtages. The urine at this time is generally crude and thin. In opening the bodies of thoſe who have died in the cold fit, after difficulty of breathing, ſighings, and great ſluggiſhneſs, I have found thick blood impacted in the lungs, and then the pulſe is always ſmall, quick, and irregular. Harv. Exercit. Anatom. cap. 16.

From moſt of theſe ſymptoms it is evident, that not only the free motion of the ſpirits through the nerves is interrupted, but that alſo the vital functions are diſturbed; for the coldneſs of the extremities, as we ſaid before at Aph. 621, ſuppoſes a leſs attrition of the veſſels and humours againſt each other, and conſequently that the fluids ſtagnate about the extremities; hence the heart will be leſs contracted, leſs emptied, and therefore a leſs influx of the nervous fluid from the cerebellum.

APH. DCCL.

THIS cold fit is followed by another, which begins with heat, redneſs, a ſtrong, large, and more free reſpiration, leſs anxiety, a larger and ſtronger pulſe, great thirſt, and great pain in the head and limbs, the urine being generally red. This ſtage anſwers to the *acme* or height of continual fevers.

APH. DCCLI.

AT laſt there generally enſues a profuſe ſweating, with a remiſſion of all the ſymptoms, the urine appears thick, and depoſits a ſediment like brick-duſt; the patient falls into a ſleep, the fever goes perfectly off, and leaves a laſſitude and weakneſs.

APH. DCCLII.

BUT intermitting fevers frequently turn into thoſe of the acute and dangerous kind, which is chiefly owing to too great an heat and motion of the humours.

That intermitting fevers are naturally inclined to make this change, was ſaid before at Aph. 748, and more eſpecially when they were epidemical: but even perfect intermittents, which regularly keep to their periods for a time, do likewiſe ſometimes change into *continuals*, if the patient is kept too hot, and takes heating medicines.

APH. DCCLIII.

AN intermitting fever in running through theſe three ſtages, greatly injures the ſmall fibres of the veſſels and viſcera, by the ſtagnation, obſtruction, coagulation, propulſion, reſolution, and too great attenuation of their fluids; hence the veſſels are weakened, their humours become morbid, being chiefly vitiated with that kind of diſorder, which ariſes from an imperfect aſſimilation and unequal mixture of the humours; from all which an acrimony ariſes. Hence alſo there is a great diſpoſition to profuſe and weakening ſweats, the more viſcid parts of the blood tranſpiring through the pores; then the urine is ſurpriſingly thick, turbid, oily, and like that of cattle, the ſaliva is alſo thick; hence the blood weakened, diſſolved, and hardly coherent, being thus deprived of its fluid parts, the remainder will be acrid and thick; and therefore, from a relaxation of the veſſels, and from a lentor and acrimony of the humours, intermittents of long continuance often terminate in chronical diſeaſes; as the ſcurvey, dropſy, jaundice, leucophlegmatia, ſcirrhous tumours of the abdomen, and all the diſorders which may follow from thence.

Whoever attentively conſiders every thing that happens in the three ſtages of intermitting fevers, may readily underſtand all the various effects produced in the body from theſe fevers: for in the cold fit the ſolids become rigid, and conſequently the coheſion of their parts muſt be then greatly increaſed; but by the ſucceeding heat they are relaxed, and the velocity

velocity of the circulation being increaſed, the fluids act with a greater impetus againſt the ſides of the veſſels, and diſtend them; hence the whole body, which before looked pale and contracted, now ſwells and looks red. By theſe changes often repeated, the ſtrength of the ſolids muſt be greatly diminiſhed: for even the hardeſt wood, by often bending, breaks, and the ſtrongeſt ſprings, by theſe means, loſe all their elaſticity. If it be likewiſe conſidered, that in the cold fit the humours ſtagnate, and that the blood in the larger veins and ſinuſes about the heart tends to concretion, and being thus rendered impervious, obſtructs the veſſels, and muſt then paſs with difficulty through the extremities of the arteries. Hence the ſolid fibres compaſſing the coats of theſe veſſels will be ſtretched, and conſequently weakened. See Aph. 25. N°. 3. But during the hot fit, the ſtrongly cohering particles of the blood are ſo attenuated and reſolved by the increaſed force of the heart and action of the veſſels, as to paſs through the extremities of the arteries into the veins, whereupon the fit terminates, and the circulation becomes free and eaſy.

As it is therefore evident that the ſtrength of the ſolids is weakened by intermitting fevers, it is no wonder that a morbid degeneration of the humours ſhould follow, eſpecially ſuch as proceeds from an imperfect aſſimilation and mixture of their parts. Thus in the hot fit, the formation and concoction of the chyle, ſo neceſſary to moderate the acrimony of the blood is impeded, and the digeſtion of the aliments is alſo deficient, even in the intervals of the fits, from this weakneſs of the ſolids, and degeneration of the fluids. See Aph. 100.

From all theſe cauſes there is a great tendency to profuſe and weakening ſweats; for the red parts of the blood are diſſolved by theſe fevers, as is evident from the pale colour of thoſe who have been long afflicted with them; ſo that not only the watery parts

of the humours, but even the viſcid parts of the blood itſelf, when diſſolved, may be ſometimes diſcharged by ſweats. For our aliments firſt aſſume the plaſtic nature of the ſerum, which ſo eaſily concretes by an increaſed heat; and naturally no ſuch humour is expelled from the body, either by urine or ſweat. But the veſſels being weakened, and the cutaneous pores relaxed by profuſe and long continued ſweats, the thicker humours may be expelled by theſe paſſages, and even thoſe particles which ſupply the matter of the chyle, from whence great weakneſs muſt follow.

The urine is ſurpriſingly thick, turbid, &c.] For by heat and an increaſed circulation the oily and ſaline parts of the blood acquire a greater acrimony, and at the ſame time a great number of particles are abraded from the ſolids; therefore the urine is thick and turbid, being now more plentifully ſaturated with contents. For this reaſon the ſaliva is likewiſe thicker and more abundant. See Aph. 100.

Hence the blood weakened, diſſolved, &c.] As a weakneſs of the ſolids and a diſſolved ſtate of the fluids diſpoſe to cacochymy, it is not to be wondered that intermitting fevers of long continuance produce various chronical diſeaſes, as the ſcurvy, dropſy, &c. But a ſwelling of the legs is no bad ſign, nor did Sydenham ever eſteem it as ſuch, being taught by obſervation, that the fever went off in proportion as this ſymptom advanced. This ſwelling therefore does not ſeem to ariſe from mere laxity only, but from a part of the morbific matter alſo depoſited upon theſe parts. Medicated wines of bitter ſtrengthening medicines uſually remove this diſorder, with gentle frictions of the ſwelled parts.

It is demonſtrated in our medical inſtitutes, that the venal blood returning from the pancreas, ſtomach, omentum, ſpleen, and meſentery, is collected in the trunk of the vena portarum, and from theſe diſtributed by the converging branches of the ſame veſſel throughout

throughout the whole ſubſtance of the liver. It is therefore evident that obſtructions may be eaſily formed in this viſcus by thick blood, becauſe it is obliged to paſs through narrow arterial veſſels, without any new force from the action of the heart. From the ſame cauſe obſtructions may ariſe in the other viſcera of the abdomen, which ſometimes change into ſcirrhus tumours, hardly poſſible to be afterwards reſolved. But it is in the mean time to be obſerved, that tumours of the abdomen ariſing from intermitting fevers are not always of dangerous conſequence; for Sydenham has obſerved, that a ſwelling of the abdomen in children, after long continued autumnal agues, is a ſign that the diſeaſe will go off in a ſhort time.

APH. DCCLIV.

BUT in other reſpects, if intermittents are not of the malignant kind, they diſpoſe the body to long life, and free it from obſtinate diſeaſes.

A long continued quartan emaciates the body, all the fat being diſſolved and carried off by urine and other emunctories, even as much as by mercury itſelf, or ſudorific decoctions; whence there is almoſt a radical change of the humours, and conſequently a removal of the moſt obſtinate diſorders, after they have been in vain attempted by the moſt proper medicines.

APH. DCCLV.

HENCE, after an accurate examination of the whole hiſtory of intermitting fevers, their proximate cauſe appears to be a viſcidity of the arterial blood, and perhaps an inactivity of the nervous fluid, both of the cerebrum and cerebellum, deſtined to the heart, ſome other cauſe afterwards ſupervening which excites a quicker and ſtronger contraction of the heart, and a reſolution of the ſtagnant matter.

APH. DCCLVI.

SINCE therefore this order of the ſtages always takes place in intermitting fevers, it ſeems evident that he who can remove the firſt period (749,) aud the firſt cauſe (755,) is alſo able to remove the whole paroxyſm.

APH. DCCLVII.

MOreover, as an infinite number of cauſes, and thoſe even very ſlight, may produce the firſt ſtage, or cold fit of an exquiſite intermitting fever, and its proximate cauſe; and as many ſuch cauſes may be bred, increaſe, and come to maturity in a certain time, in all the fluids formed and ſecreted in the body; it is therefore more difficult to diſtinguiſh, out of an infinite number of poſſible cauſes, the real and true cauſe, than to find out one that is poſſible; to account for the periodical returns of theſe fevers, agreeable to the laws of the animal œconomy,

nomy, as will appear to any one who examines into the matter.

We come now to that which has tortured the reaſon almoſt of every phyſician, namely, why the fits of intermitting fevers return at certain periods, while *continuals* run through their whole courſe without interruption, from the beginning to the end of the diſeaſe.

Sydenham was of opinion, that the difference between continual and intermitting fevers chiefly conſiſted in this, that *intermittents* perform the ſame thing by parts, and at different times, which *continuals* perform by one uninterrupted febrile motion: hence he judged that nearly the ſame time was required in changing, ſubduing and expelling the febrile matter in an intermitting, as in a continual fever, which uſually performs its courſe in fourteen days, or three hundred and thirty-ſix hours; he therefore believed that the like number of hours were required in a *quartan* to throw off its matter in the ſpace of ſix months. But there here remains a great difficulty, ſince the reaſon does not appear why intermitting fevers ſhould perform that at ſeveral times, which a continual fever does in one uninterrupted courſe. Does an intermitting fever ſubdue and expel part of the febrile matter in every paroxyſm? Or is it all ſubdued or expelled by every fit, and renewed again in a certain ſpace of time to produce a new one? Theſe are ſubtle ſpeculations, which ought to be inquired into with the utmoſt care, as far as faithful obſervations and juſt reaſoning will conduct us in matters of ſo much obſcurity.

Sydenham has obſerved, that in an acute fever, which uſually went off by proper treatment with a moderate ſweat in fourteen days, if purges or glyſters were unſeaſonably uſed, a new fever was kindled again in a day or two, which ran through other fourteen days, and required the ſame method of cure

with the former; the febrile matter not being duly evacuated by the critical ſweat. It is not an uncommon thing for imperfect criſes to happen; but then the returns of the paroxyſms never keep up to any certain period of time, like that of intermittents. Beſides, although part of the morbific matter may be expelled at each paroxiſm, yet no reaſon appears why the quantity or activity of what remains, ſhould be ſo increaſed in the intervals of the fits, as to produce a quotidian in twelve, and a tertian in thirty-ſix hours, &c. But we know that the bark will prevent the future paroxyſms, without producing any ſenſible evacuation, ſo that the cure of the intermittent cannot be aſcribed to an expulſion of the morbific matter.

The like difficulties ſeem to ariſe, if we ſuppoſe the febrile cauſe to be expelled at every fit, and that new matter accumulated in the intervals occaſions the fit next following. It is certain that people afflicted with a quartan, find themſelves perfectly well a quarter of an hour before the fit; yet that morbific matter muſt be preſent, which ſoon after excites ſuch great diſturbances.

But although corrupt humours, and many other cauſes enumerated at Aph. 586, may excite a fever; and that the like cauſes may therefore produce various fits of intermitting fevers, yet theſe alone will not be ſufficient. Something more is required, as will appear from the following obſervations. One who has been ill with an autumnal tertian, and has been free from it for ſome days, if he eats a large quantity of ſalt or dried bacon, or if he expoſes himſelf to the injuries of the weather, the fever often returns again, and obſerves its former periods; and thoſe afflicted with a vernal quartan, from the like errors when the fever is off, may ſuffer a return of the quartan. There is therefore, in ſuch patients, a latent diſpoſition to produce in one a tertian, in the other a quartan fever; and therefore theſe different intermittents

mittents do not ariſe from the acceſſion of a new cauſe, which is ſuppoſed to be the ſame in both, but from ſome prediſpoſing cauſe different in each perſon. It ſeems therefore evident, that matter accumulated in the intervals of the fits may be an exciting, or occaſional cauſe; but that the pre-diſpoſing cauſe is altogether different from this. See the comment to Aph. 11.

That this pre-diſpoſing cauſe, whatever it may be, limits the various kinds of intermitting fevers, is confirmed from the reduplication of their fits. But what this cauſe is, and whether it reſides in the ſolids, or in the fluids, or in both, ſeems very difficult to explain; for theſe cauſes may lie concealed in the body, until the occaſional cauſe put them into action. There are various opinions upon this ſubject. Galen places the cauſe of a tertian in the bile, of a quotidian in the phlegm, and of a quartan in the atra bilis. Helmont, after Fernilius, places the cauſe about the ſtomach, duodenum, and pancreas; others, in the abdominal glands, &c. But I believe they did not diſtinguiſh the occaſional from the pre-diſpoſing cauſes, and have even ſometimes taken the alterations of the humours produced by the fever, for the cauſe of it.

But if we conſider what was ſaid at Aph. 755 & 756, it will appear probable, that the pre-diſpoſing cauſe is rather ſeated in the moſt ſubtile fluid, or in the ſmalleſt veſſels through which it moves, or elſe in the common origin of them all, the *encephalon*. For the firſt ſigns of the approaching fit ſhew, that there is ſome alteration made in thoſe parts; thus, in infants, whoſe nerves are ſo very tender and irritable, convulſions frequently ariſe; and ſudden and violent paſſions of the mind have ſometimes produced, and again removed, intermitting fevers. The cortex, ſo uſeful in ſtrengthening the nerves, and ſtilling the inordinate motion of the ſpirits, as well as in ſubduing, intermitting fevers, is another argument in

favour of this opinion, even though it produces no ſenſible evacuation; and, therefore, ſeems to act only upon the pre-diſpoſing cauſe. Again, palſies, epilepſies, and other nervous diſorders, are happily cured by intermitting fevers. Inunctions of the ſpina dorſi, with penetrating aromatic ointments, frequently remove intermittents, the efficacy of which is well known in other nervous diſeaſes.

The obſervations of Sydenham ſeem likewiſe to confirm this opinion; for, in an epidemical intermittent, which he deſcribes, the fits invaded, without a rigor or horror; but the patients were ſeized with the ſymptoms of an apoplexy, ſo that the functions of the encephalon were not only diſturbed, but likewiſe entirely ſuppreſſed for a time.

But as in the nerves ſerving for muſcular motion, or, in their origin, or, in the ſubtile fluid moved through them, ſuch a change may happen in a certain ſpace of time, as to cauſe the trembling, weakneſs, wearineſs, &c. which happen in the beginning of the febrile fit, ſo it ſeems probable that the ſame thing takes place in the ſentient nerves, and then the moſt ſevere pains afflict the patient at certain periods. I was conſulted for a pain in one ſide of the head, which returned every day, at the ſame hour, continued very violent for eight hours, and then went gradually off. Epithems and bliſters were applied to the head and feet, purges, &c. were given, but without any benefit. At laſt, the bark was given, and the diſorder ceaſed.

May we not, therefore, conclude, from ſuch caſes, that a true, intermitting fever ſometimes ſeizes a particular part? See Medical Eſſays, vol. 1. pag. 295, 296. Vol. 2d, pag. 302.

But this pre-diſpoſing cauſe, which is probably ſeated in the moſt ſubtile fluid, or in the veſſels which contain it, or in their origin, may there be put into action by various cauſes. For external cold, indigeſtible food, violent paſſions of the mind, commotions

motions raiſed in the body by purges, and many other things of the like kind, may have this effect. But does the pre-diſpoſing cauſe require an occaſional cauſe to put it into action? This is certainly a matter of doubt; though it cannot be denied, but that the pre-diſpoſing cauſe may be excited by accidental cauſes, even at a time when it ſeems moſt inactive. Thus in a recent quartan, the moſt experienced phyſician cannot diſcover any thing amiſs, either in the fluids or ſolids, juſt before the approach of the fit. Beſides theſe occaſional cauſes do not ſeem able to excite the fit at any time, without the action of the pre-diſpoſing cauſe, but only to fix the returns of it. A remarkable caſe in confirmation of this happened to myſelf. A man ill of a quartan the whole winter, was cured by the warmth of the ſpring without the uſe of the bark, and was free from the fever for five months. In fiſhing with his friends, ſome of them, for the ſake of mirth, threw the net over him, after it was dragged to the ſhore. The perſon ſoon after grew cold, began to tremble, and had a fit of an intermittent, which afterwards returning every fourth day, held him for ſeveral weeks. Being admoniſhed to take care of himſelf on thoſe days upon which the fits were uſed to return, and upon marking every third day in his almanack, he found that this misfortune befel him upon the day on which the quartan would have invaded, if it had ſtill continued.

Hence it ſeems that the pre-diſpoſing cauſe is ready to be put in action at various intervals, and often at a minute's warning; and likewiſe that it is frequently put in action, though nothing can be diſcovered in the body that can act as an occaſional cauſe. Is therefore this pre-diſpoſing cauſe able to excite the fever? Or is there, with the pre-diſpoſing cauſe, one that is capable of exciting it, but in a determinate ſpace of time only? If the laſt be admitted, we can never diſtinguiſh the exciting from the pre-diſpoſing cauſe,

ſince both are ſeated in the moſt ſubtile fluid, in the ſmalleſt veſſels, or in their common origin, and manifeſt themſelves only from their effects.

It is certain that many changes happen in a healthy ſtate, and in a determinate ſpace of time. Thus hunger, ſleep, &c. in many people keep their uſual time. It is alſo probable, that the humours ſeparated from the blood are collected in determinate quantities in a certain time; but ſuch hypotheſis do not agree to the phænomina obſervable in intermitting fevers. For although the humours in the ſtomach, inteſtines, and the other viſcera be expelled by vomits and purges; yet the intermitting fever is not cured, but often becomes more ſtubborn and more difficult to cure, as Sydenham has remarked; and even a purge unſeaſonably given, will cauſe a return of the fever worſe than before.

From all this we may conclude, that the cauſe of intermitting fevers is in the nervous fluid, in the veſſels which contain it, or in the common origin of them both, the encephalon; but what the alteration is which conſtitutes this cauſe, I muſt confeſs myſelf with Sydenham and other eminent phyſicians, to be perfectly ignorant. But although this latent cauſe of intermittents does not ſeem to require any *fomes* to renew the paroxyſm; yet it muſt be allowed, that morbid humours collected may occaſion thoſe latent cauſes to act more violently.

APH. DCCLVIII.

THE cure therefore requires the uſe of medicines that are aperient, ſaline, alcaline, aromatic, of minerals, diluents, ſoft oils, heat, motion, fomentations and frictions, at the time the fever intermits, or in the firſt ſtage (749.)

The

The beſt method of curing intermittents is that which conſpires with the fever, to reſolve concretions, open obſtructions, and reſtore a free circulation: but different remedies are required, according to the different ſeaſon of the year, age, and habit of the patient, epidemical conſtitution, &c. In the ſpring, and in young ſubjects, the hotter medicines muſt not be uſed. Autumnal fevers require warmer medicines, as the rad. ſerpentar. contrayerva, ſaffron, and the like penetrating aromatics. In cold phlegmatic habits, alcaline ſalts are the beſt aperients; but theſe are often injurious to warm and bilious habits, and therefore thoſe of the ſaline neutral kind are here to be preferred, as nitre, ſal polychreſt. tartar. vitriolat. &c. If there are ſigns of putrefaction, medicines of the acid and oily kind are uſeful, ſuch as ſpt. nitr. dulc. rob of elder-berries, currants, and the like. But if the ſkin, eyes, and urine appear yellow, with a weight and ſenſe of anguiſh about the præcordia, emollient and diluent medicines are of the greateſt uſe, ſuch as decoctions of dandelion, ſuccory, ſcorzonera, common graſs, &c. mixed with ſal polychreſt, and ſweetened with honey, and drank plentifully during the intermiſſion of the fever.

But although aperients and attenuants are generally neceſſary in the cure of intermitting fevers; yet caſes ſometimes occur, where aſtringent and incraſſating medicines, with ſuch as ſtrengthen the ſolids, are rather needful; as when the blood is diſſolved, and the patient waſtes with profuſe ſweats, eſpecially in his ſleep. In this caſe, the cortex, infuſed in rough red wine, with ſome ſpices, is a very good medicine. Various remedies which open the veſſels and attenuate the humours, are enumerated in the *Materia Medica*, under the preſent aphoriſm, from whence ſuch may be choſe as are beſt ſuited to the nature of the diſeaſe, conſtitution of the patient, &c.

In the cold fit, which is the moſt dangerous ſtate of intermitting fevers, ſuch things as attenuate and dilute

dilute the blood, relax and open the veſſels, are of the greateſt benefit. But the more heating medicines, and ſuch as are violently ſtimulating, are to be avoided in this ſtage of the fever, as we ſaid before at Aph. 624, where we treated of febrile cold.

APH. DCCLIX.

A Purge or a vomit is often very beneficial to carry off the redundant humours in the primæ viæ, given at ſuch diſtance from the fit, that its operation may be over before it begins. That this evacuation is neceſſary, may be known from the patient's diet, from the preceding diſeaſes and ſymptoms; from a nauſea, vomiting, ructus, diſtention, and fumes from the ſtomach; from a foulneſs of the tongue, fauces, and palate, averſion to food, bitterneſs of the mouth, a vertigo, with dimneſs of the ſight; and after the operation an opiate is to be given, to allay the diſturbance before the fever invades.

When it appears that foul humours are collected in the primæ viæ, they ought to be removed as ſoon as poſſible; but at what time a vomit or purge may be beſt taken, is not yet agreed on by phyſicians. Sydenham gave them when the fever was off; but as there is frequently a nauſea and vomiting in the time of the cold fit, many have thought that then the morbific matter is very moveable, and might be eaſily expelled by an emetic. Dr. Thomſon followed this method for twenty years with ſucceſs.

APH. DCCLX.

THESE vomiting and purging remedies are likewiſe beneficial, inaſmuch as they ſtimulate and ſhake the whole body, as well as evacuate the humours.

APH. DCCLXI.

OTherwiſe theſe medicines are hurtful, as they weaken, exhauſt the moſt fluid juices, and diſturb the digeſtions which are here ſo very neceſſary; and thus either prolong the diſeaſe, or deſtroy the patient. The cold fit and fever are often removed by a ſweat, the patient's body being firſt filled ſome hours before the fit begins, with ſome aperient, diluting, and gentle narcotic liquor, after which a ſweat is to be raiſed, and continued for two hours after the invaſion of the fit.

Sydenham found this method ſo very uſeful, that he declares he had not experienced any better for the cure of autumnal tertians, at leaſt thoſe of the epidemical conſtitution which he deſcribes.

APH. DCCLXII.

HENCE venefection of itſelf is always injurious; yet it may be beneficial by accident, as alſo a thin and ſtrict diet.

Blood-letting was ſo much condemned by Sydenham, that he declares it miſchievous, "unleſs the "ſurgeon kills the fever at the ſame time, and by the "ſame

" ſame inſtrument with which he wounds the vein." Yet it may be of ſervice by accident, as in plethoric people, eſpecially in the ſpring, or when a violent pain ſeizes the head from the ſame cauſe; but then bleeding does not properly contribute to the cure of the fever itſelf, but only prevents the bad conſequences which may ariſe from the too great quantity and rarefaction of the blood.

A thin and abſtemious diet, or the uſe of ſuch only as abound with the leaſt nouriſhment, muſt be equally hurtful in intermitting fevers; for as they are frequently of long continuance, eſpecially quartans, " we ſhould endeavour to enable the body to ſuſtain " with eaſe that which it muſt ſupport for a long " time," as Celſus expreſſes it.

APH. DCCLXIII.

WHEN the fever is in its ſecond ſtage, watery drinks actually warm, and mixed with ſubacid, aperient, and nitrous medicines, are indicated, or decoctions of the ſeveral ſorts of ſuccory, and the like mild vegetable aperients; for now the patient requires reſt, and a moderate degree of heat.

This aphoriſm directs what ought to be done in the hot fit of an intermitting fever, which is ſo explicit, that it wants no comment.

APH. DCCLXIV.

WHEN the fit is terminated by a criſis, it will be neceſſary to give ptiſans mixed with a little wine, fleſh broths, and temperate decoctions to ſupply the blood with matter for ſweat and urine, which ought not to be forced by

by heat, or heating medicines, or by the weight of bed-cloaths, but gently promoted by great quantities of ſuch liquids taken for a long time.

Although intermitting fevers go off by profuſe ſweats, yet it is always expedient to promote them by art, for fear of waſting the more fluid parts of the blood. See Sydenham.

APH. DCCLXV.

MOreover, the urgent ſymptoms are to be relieved, agreeable to the directions given for the cure of thoſe in acute fevers at Aph. 617, to 726.

It is here to be carefully obſerved, that in the cure of febrile ſymptoms, we muſt always have in view the cauſe and ſtate of the diſeaſe itſelf. For inſtance, as a frequent uſe of bleeding, vomits, and purges is hurtful in intermitting fevers, therefore if ſome ſymptoms require theſe evacuations, yet they ought not be uſed ſo liberally as in other caſes. Thus in a certain epidemical intermitting fever, attended in the fit with the ſame ſymptoms that uſually accompany an apoplexy, Sydenham did not attempt to remove them by great evacuations, as he knew theſe to be perfectly againſt the original cauſe, namely, the intermitting fever.

APH. DCCLXVI.

WHEN the fever is removed, the patient is to be ſtrengthened by a reſtorative diet, and corroborating medicines; and when his ſtrength is recovered, he is to be purged ſeveral times.

APH. DCCLXVII.

BUT if it be an autumnal ague, and ſevere; if the patient is weakened by the diſeaſe; or if the diſorder is of long ſtanding; if there are no ſigns of inflammation internally, nor of pus collected in any part, nor of any conſiderable obſtruction in the viſcera, the fever may be then removed by the Peruvian bark, either in the form of a powder, infuſion, extract, decoction, or ſyrup, adding ſuch other medicines as may be requiſite, during the intermiſſion of the fever, under a proper regimen, in a due doſe, and in a juſt order.

As the method of curing intermitting fevers by the uſe of the Peruvian bark is now ſo well known, it is unneceſſary to give an abridgment of the comment to this aphoriſm.

APH. DCCLXVIII.

BUT likewiſe epithems are often ſerviceable, and alſo inunctions of the ſpina dorſi, and the uſe of aſtringent decoctions.

Epithems applied to the pit of the ſtomach, to the wriſts, under the hams or arm-pits, a few hours before the fit is expected, have often cured intermittents. They are uſeful in young children, who often reject every kind of medicines. Forms of epithems may be ſeen in the *Materia Medica*, under the preſent aphoriſm.

Unctions of the ſpina dorſi were uſed by the ancient phyſicians to prevent the cold fit, and often with

with ſucceſs. Aſtringents are frequently given by the common people, and are of uſe when the humours are in a diſſolved ſtate, either naturally, or by the diſeaſe; but when they are too thick from a diſſipation of their more fluid parts, or when the viſcera are obſtructed, it is evident that aſtringents muſt be hurtful. Forms of this kind are alſo inſerted in the *Materia Medica*.

APH. DCCLXIX.

FOR the cure of every individual kind of intermittents, let it be obſerved, 1. That ſuch as are truly intermitting, go off the ſooner the quicker the fits come on, and the reverſe. 2. That the ſhorter the intervals, the nearer they approach to *continuals*, and are changed into them. 3. That their cauſe, on this account, is perhaps more moveable, and more abundant. 4. Hence vernal intermittents go off ſpontaneouſly as the warm weather advances. 5. That autumnal increaſe as the cold advances. 6. And from hence it is evident which of theſe fevers require medicine, and of what kind.

This aphoriſm contains corollaries or deductions from the preceding, relating both to the prognoſis and cure of different intermittents, which is eaſily underſtood from what has been ſaid before.

Of Acute Febrile Diseases.

APH. DCCLXX.

WE come now to consider acute diseases, which, though attended with a violent fever, yet occasion an inflammation of particular parts, from whose injured functions the disease receives its name. Such are a phrensy, coma, carus, quinsy, peripneumony, spitting of blood, pleurisy, inflammation of the breasts, diaphragm, stomach, liver, spleen, mesentery, intestines (whence a dysentery, iliac passion, volvulus, tenesmus, the piles, and a bilious colic) kidneys, bladder, ureters, uterus, and joints; and of the external integuments, as in the measles and small-pox.

Though all the diseases here enumerated are attended with an acute fever, and though their cure may be learnt from what has been already said of fevers, and also of inflammations; yet it will be necessary to treat of each separately, as there are several peculiarities which deserve to be remarked, both in the diagnosis, prognosis, and cure.

There are three things to be considered in acute inflammatory diseases, namely, the continual fever, the inflammation, and the organ whose functions are injured; and we must carefully observe how far the general method of treating fevers is agreeable to these diseases, and what is further necessary in each.

Of a PHRENSY.

APH. DCCLXXI.

IF a perpetual delirium, with a fierceneſs, ariſes from a primary affection of the brain, attended with an acute continual fever, the diſeaſe is called a true phrenſy.

When it ariſes from a diſorder in ſome other part, transferred to the brain by a fever, inflammation, &c. it is called a ſymptomatic phrenſy, παραφροσυνη, an alienation, or deception of the mind.

This diſtinction betwixt a true and ſymptomatic phrenſy is neceſſary, becauſe a great difference is often required in the cure of theſe diſorders, as will appear hereafter at Aph. 782.

APH. DCCLXXII.

A True phrenſy is preceded by a violent inflammatory heat, and great pain within the head; by a plethora; an inflammatory diſpoſition of the blood; a redneſs of the eyes and face; diſturbed ſleep, and ſlight deceptions of the mind; youth; heating things; inſolation, watching; anger, grief; protervity or fierceneſs; ſudden forgetfulneſs; a dryneſs of the whole body, but eſpecially of the brain; and a picking the nap of the bed-cloaths.

But a ſymptomatic phrenſy is preceded by almoſt every acute diſeaſe with a fever; a pain of the ſide not pleuritic, with a ſlight perturbation of mind; an

inflammation of the pleura, lungs, and diaphragm, which are the very worſt kinds. This phrenſy may be preſaged by a black tongue, coſtiveneſs, a retention of the urine; white ſtools, which are always fatal; a pale, colourleſs, thin urine, no thirſt, fierceneſs, a redneſs of the countenance, urine with a black cloud ſuſpended in it, and watchings, are ſigns of an approaching inflammation in the head.

APH. DCCLXXIII.

BOTH kinds of phrenſies have the following ſymptoms: 1. A depravation, not only of the ſenſible ideas, but alſo of the internal ſenſes, of reaſon, and the affections of the mind. 2. An ungovernable fierceneſs, and turbulent ſleep. 3. An hard pulſe, a rare and large reſpiration. 4. A countenance generally very red, wild, aud ghaſtly, the eyes proturberant and fierce, with a dripping of blood from the noſe.

APH. DCCLXXIV.

THE prognoſis is as follows: A true phrenſy kills on the third, fourth, and ſeventh day, and ſeldom exceeds the laſt.

As a true phrenſy ſuppoſes a primary affection of the brain, a part extremely tender, and eaſily deſtroyed, it is ſufficiently evident why it rarely holds out longer than the ſeventh day. The obſervations of Hippocrates confirm this prognoſis. Philiſcus was ſeized with a delirium on the third day, had afterwards a ſlight ſtillicidium of blood from the noſe, with a large and rare reſpirarion, and expired on the ſixth day. Epidem. 1. Ægrot. 1. Philiſtes, who had been long

long afflicted with the head-ach, being ſeized with a continual fever after hard drinking, became violently delirious or phrenitic on the ſecond day, was convulſed on the fourth, and expired on the fifth day in the morning. Epidem. 3. Ægrot. 4.

But a ſymptomatic phrenſy is often protracted to a greater length. Thus Appollonius expired on the thirty-fourth day; the woman who was delivered of twins, died phrentic on the ſeventeenth day; and the youth who lay ill of a fever from hard drinking, &c. died on the twenty-fourth day. See the caſes in the third book of Epidem. Ægrot. 13, 14, 16. Yet a ſymptomatic phrenſy may be ſometimes ſuddenly fatal, as in the caſe of Calvus of Lariſſa, who expired on the fourth day, about noon.

And then if the phrenſy is violent, it often ends in a mania.

A continual delirium without a fever is by every one called madneſs; and a phrenſy is diſtinguiſhed from madneſs only by the fever which attends it. When therefore the fever ceaſes in phrentic patients, they may be ſaid to be mad.

If this madneſs increaſes a little, it becomes ungovernable.

It often ends in a lethargy, coma, and catalepſy.

For all theſe diſorders ſhew, that the tender fibres of the encephalon are compreſſed, and that the influx of the ſpirits into the nerves ſerving to the ſenſes and voluntary motions, is obſtructed, if not wholly intercepted; and when theſe diſorders follow a phrenſy, a fatal prognoſtic may be made.

A vomiting of eruginous matter, as an effect of the inflammation of the brain; a frequent and indecent ſpitting upon the by-ſtanders; a trembling; the fæces and urine intercepted, or white; a crude urine; convulſions; catching at things which ſeem to fly before the eyes; duſty eyes; a gnaſhing of the teeth; want of thirſt, the common forerunner of convulſions; a perpetual change of ſymptoms; the ſubſiding of an ulcer, are all frequent preſages of great danger and of death.

Eruginous matter.] In this aphoriſm are enumerated thoſe ſigns which point out the greateſt danger, or death, in a phrenſy; and among theſe eruginous vomitings is juſtly placed. For when this vomiting happens in phrenſies, we are certain that the inflammatory cauſe affects the brain itſelf, and therefore the worſt conſequences may be expected from it. The hiſtories given us by Hippocrates ſhew this. Philiſtes had eruginous vomitings on the firſt day of his fever; on the ſecond, he was phrenitic; on the fourth, convulſed; and on the fifth, expired. Another phrenitic patient vomited eruginous thin matter on the firſt day; on the ſecond, tremblings throughout the whole body; convulſions the following night; and on the fourth day, expired.

A frequent and indecent ſpitting.] Whether this ſpitting in itſelf is a ſign of a phrenſy, may indeed be a matter of doubt: but as the free circulation of the humours through the internal parts of the head is impeded, the blood muſt be propelled with a greater force into thoſe parts which receive their branches from the external carotids; whence that redneſs and fierceneſs of the face, protuberant eyes, &c. mentioned in the preceding aphoriſm. From the ſame cauſe the ſalival glands ſhould ſeparate a greater quantity of ſaliva, which the patient is continually

tinually ſpitting out. Hippocrates obſerved this ſpitting, and pronounces it a bad ſign in phrenitic patients; but when they ſpit upon the by-ſtanders, it is a ſign of great protervity, and a ſure mark of a delirium in people who are well bred. If a fierce anſwer from one of a mild diſpoſition is a bad preſage in diſeaſes, much more is ſuch an indecent ſpitting.

Trembling.] When we treated of a febrile trembling at Aph. 627, it was there demonſtrated that an imperviouſneſs of the arterial fluid through the veſſels of the encephalon was amongſt the cauſes of trembling. When ſuch trembling happens in a phrenſy, it ſhews that the free influx of the ſpirits into the nerves which ſerve for muſcular motion is impeded, and that the medulla of the brain is affected.

The fæces and urine intercepted, &c.] Of all theſe, ſee what has been ſaid in the comment to Aph. 734, and 772.

Convulſions.] It was proved at Aph. 712, that convulſions are almoſt conſtantly fatal, after inflammations of the brain.

Duſty eyes.] The eyes are cleanſed and moiſtened by a ſubtile dew exhaling from the ſmalleſt arterial ducts, which, by the frequent motion of the eyelids, rubs off all the duſty particles adhering to them. When this exhaling dew is wanting, the eyes appear dry and rough, and as a number of ſmall arteries are diſperſed through the eyes from branches of the internal carotids, we then juſtly conclude, that there is the like dryneſs in the internal parts of the head. Add to this, that the ſick, in this ſtate, lie ſtupid, with their eyes fixed, and wide open, the eye-lids winking hardly at all. See what has been ſaid of the ſorrowful eye at Aph. 734.

Gnaſhing of the teeth.] Hippocrates obſerves, "that a gnaſhing of the teeth portends madneſs and "death, unleſs it has been cuſtomary from a child; "but if it happens in a delirium, it is then very pernicious."

" nicious." Otherwiſe it denotes an involuntary and convulſive motion of the muſcles moving the jaws, and is therefore a very bad ſign.

Want of thirſt, &c.] This ſhews that the common ſenſory is wholly diſturbed. See concerning this ſymptom what has been ſaid at Aph. 637, and 739.

A perpetual change of ſymptoms.] The brain is that corporeal organ on which the exerciſe of the voluntary motions, and the actions of the external and internal ſenſes depend: and ſince by an alteration in each of the nerves, diſtinct changes of thought are produced; and in like manner, in each of the muſcles an arbitrary motion may be excited by the influence of the will; it is evident that all and each of the nerves have a diſtinct origin in the brain. An inflammation therefore being ſeated in the interior parts of the head, and by that means the motions of the fluids through the veſſels being diſturbed, very different ſymptoms may be excited, as the different origins of the nerves are affected. Thus wonderful phantaſms are offered to the eyes of delirious people, variety of ſounds to the ears, &c. Hence the reaſon is evident why Hippocrates ſays, " that frequent " changes in phrenitic patients denote convulſions."

The ſubſiding of an ulcer.] This is not only one of the worſt ſigns in a phrenſy, but likewiſe in other diſeaſes, as it denotes a defect of the vital powers.

A phrenſy from a peripneumony is fatal; from the ſmall-pox very bad; that ariſing from the iliac paſſion is fatal alſo.

In a peripneumony a phrenſy uſually ariſes, becauſe the blood cannot paſs through the inflamed lungs from the right ventricle of the heart, nor the venal blood freely evacuate itſelf into the right auricle and ventricle, and therefore the blood will be obſtructed in its return from the head by the jugular veins, while the arteries, in the mean time, continue to propel their blood to the head; and thus the veſ-

ſels

ſels of the brain will be diſtended, and its functions diſturbed.

When the fever in the firſt ſtage of the ſmall-pox occaſions a phrenſy, it is indeed dangerous; yet there is reaſon to hope, that when the puſtules break out, that will ceaſe; but when it continues after the eruption, the danger is greater. But of this more, when we come to treat of the ſmall-pox.

That proceeding from the iliac paſſion is always fatal, as will be made evident hereafter, when we come to treat of an inflammation of the bowels.

An inflammation fixed for a time, and producing a roughneſs of the fauces, ſpreading upwards, creates a mortal phrenſy, in which the patient is very buſy with his hands and fingers.

The celebtated Boerhaave has frequently obſerved ſuch caſes, in which, after a ſlight quinſy diſappearing without any good ſigns, a fatal phrenſy has aroſe, when by a bad tranſlation the inflammation of the fauces had ſeized the head, from whence he makes this prognoſis; though there are ſome paſſages pointing out the ſame to be found in Hippocrates, eſpecially in his Coan prognoſtics, where we read, "That "a moderate roughneſs of the fauces, with fruitleſs "endeaveurs to go to ſtool, a pain in the forehead, "and the patient's feeling with their hands and fin-"gers, with pain; phrenſies which are increaſed "from theſe cauſes are difficult to cure." And again, "That in a quinſy not attended with good "ſigns, pains of the head, with a fever, are fatal." But in ſuch patients a conſtant delirium aroſe with *attention of mind*, which Hippocrates tells us is much more dangerous than that which ariſes from *laughter*. Boerhaave ſaw a noble virgin. who endeavoured day and night to thread a needle, till ſhe fainted.

Thoſe phrenſies in which the patients are buſied about the neceſſaries of life are the worſt. Thus if

ſuch

ſuch patients keep from ſleep for fear of being murdered, refuſe to lie in a dark place, or reject all food and drink for fear of being poiſoned, &c. then every thing muſt turn out for the worſt. By neceſſaries here we mean thoſe things which are abſolutely required to ſupport life, and cure this dangerous diſeaſe.

APH. DCCLXXV.

FROM diſſecting the bodies of thoſe who have died of phrenſies, the meninges of the brain have been found inflamed, or a gangrene, abſceſs, or ſphacelus of the brain, or ſome acrid corroding ichor.

Boerhaave ſhewed his auditors the pia mater of a young woman, who died of a phrenſy the third day, all over red and inflamed, and the cortical ſubſtance of the brain itſelf, which is naturally of a grey colour, as red as if the veſſels had been injected with a red matter. See Bonetus's Sepulchretum Anatom.

APH. DCCLXXVI.

FROM all which it is obvious, that the proximate cauſe of a true phrenſy, is an inflammation of the pia and dura mater; but the proximate cauſe of a ſymptomatic phrenſy is an inflammation of the like kind, ariſing from a tranſlation of the inflammatory matter on the meninges of the brain.

APH. DCCLXXVII.

WHatever can produce an inflammation in theſe parts, may be conſidered as the immediate cauſes of a phrenſy.

As

As all the cauſes of inflammation, with ſuch other cauſes as determine the general cauſes towards the head, ſuch as inſolation, watchings, anger, &c.

APH. DCCLXXVIII.

HENCE likewiſe we have the true diagnoſis both of a genuine and ſymptomatic phrenſy.

For if a perpetual delirium ariſes after violent pains in the internal parts of the head, attended with an acute continual fever, it is a genuine phrenſy; but when there are ſigns of an inflammation, firſt in ſome other part of the body, and afterwards ſeizing the head, it is a ſymptomatic phrenſy.

APH. DCCLXXIX.

THE cure of a phrenzy requires an attention to the following particulars:

Varices, or, an hæmorrhoidal flux, are beneficial.

A diarrhæa is alſo good.

A pain in the breaſt and feet, or, a violent cough, often ſolve the diſeaſe.

It is likewiſe often ſolved by an hæmorrhage.

Varices.] From what has been ſaid, it is evident, that, in a phrenſy, the veſſels of the encephalon are oppreſſed both by the quantity and impetus of the blood; whatever, therefore, will leſſen the quantity of the blood, and derive its impetus from the head, towards other parts, muſt be ſerviceable in the cure. For this reaſon, varicoſe ſwellings in the veins of the legs become beneficial in phrenſies, as

as they retain a greater quantity of blood; whence leſs blood is returned to the heart, and, conſequently, ſo much the leſs in the ſuperior veſſels. Hippocrates placed ſo great hopes in varies, that he expected a termination even of madneſs from them.

An hæmorrhoidal flux.] For the hæmorrhoidal veſſels, and carotid arteries, convey the blood in oppoſite directions; whence a revulſion from the head may be reaſonably expected.

A diarrhæa.] For this is not only uſeful in diſcharging the morbific matter, but alſo by emptying the veſſels in the abdominal viſcera, and by leſſening the reſiſtance to the impulſe of the blood.

A pain in the breaſt and feet, &c.] As an inflammation in any part of the body, however remote from the head, may leave the place where it firſt fixed, and be transferred to the head, ſo may a like metaſtaſis, or tranſlation, be made from the head towards other parts, to the great relief of the patient, if made not to any of the viſcera, but to the thighs, legs, and other parts remote from the head. Hippocrates confirms theſe obſervations, who ſays, "When any "of the ſuperior parts are affected, a pain ariſing in "the hips, thighs, or knees, or alſo an aſthma, ter-"minates all theſe diſorders. They are alſo further confirmed by the caſe of Herophontes. Epidem. 1. Ægrot. 3.

An hæmorrhage.] For the noſe receives its veſſels from the internal carotids; if theſe arteries are opened, and diſcharge their blood plentifully, a revulſion will be made inſtantly from the obſtructed and inflammed parts. See Aph. 741. It is alſo cured by ſweats, but rarely.

APH.

APH. DCCLXXX.

A TRUE phrenſy requires the moſt ſpeedy application of ſuch remedies as are able to remove the inflammation raiſed in the arteries of the brain.

APH. DCCLXXXI.

THESE remedies are chiefly ſuch as have been directed for the cure of inflammations in general, obſerving the following particulars——Blood muſt be let to a large quantity from a large orifice, or from ſeveral veins at once, as in the foot, the neck, and forehead.———Diluent antiphlogiſtic decoctions, with nitre, are to be given in large quantities. ——Then cooling purges, with plenty of nitrous, diluting drinks. Glyſters of the like kind, with the addition of laxatives. The anus is to be fomented, and the piles to be rubbed with fig-leaves, or to be evacuated by leeches. Lenient and cooling waſhes and gargariſms are to be frequently uſed. The noſtrils, eyes, and ears are to be fomented; the head to be waſhed: theſe being done, and the phrenſy ſtill remaining, recourſe muſt be had to opiates, pediluvia, epiſpaſtics, and cupping-glaſſes to the lower extremities. The body is to be kept moderately cool, and in an erect poſture.

The method of curing a phrenſy is ſo accurately here laid down that this aphoriſm wants no explanation; however, it will be neceſſary to obſerve, that when the violence of the fever is abated, the delirium,

rium, coma, and great weakneſs ſtill continue, which denote that the functions of the brain are as yet diſturbed. But we muſt not then bleed, or purge, nor uſe other weakening remedies to remove ſuch remains of the diſeaſe; for they uſually give way in time to a mild diet, reſt, and an erect poſture of body, &c.

APH. DCCLXXXII.

BUT if the phrenſy ariſes from ſome other inflammatory diſeaſe, it muſt be firſt conſidered whether the nature of the diſeaſe will admit of the method of cure directed at Aph. 781; if not, it muſt be treated in a manner ſuitable to that particular diſeaſe, always adding derivative and topical remedies.

It is of great moment in the cure of a ſympomatic phrenſy to attend to the nature and genius of the primary diſeaſe. For there are fevers, even of an inflammatory nature, that will not bear the evacuations neceſſary for the cure of a genuine phrenſy. Such were the epidemical fevers deſcribed by Sydenham to have ſpread in London in 1673, 1674 and 1675. For although the ſevere head-ach, pains of the ſides, and the pleuritic blood, were ſufficient ſigns that more than a ſmall degree of inflammation attended theſe fevers; yet Sydenham obſerves, that repeated bleeding did not relieve the patients. He therefore uſed glyſters inſtead of repeated bleeding, and gave ſpirit of vitriol in ſmall beer, or an ordinary drink, by which means he happily cured this ſymptomatic phrenſy. The like was alſo obſerved by Sydenham in another kind of epidemical fever, in which there was a ſtrong tending to depoſite the febrile matter on the head, and that, as ſoon as this tranſlation happened, there then no longer remained

any ſigns of the fever. This phrenſy he cured by once opening a vein, purges repeated every other day to the third time, and by giving a mild diacodiate draught after each purge; but he did not give ſpirit of vitriol, being not ſo proper in diſeaſes where cathartics are required. Thus alſo in the ſymptomatic phrenſy, which attended the ſmall-pox, Sydenham made uſe of a method not at all convenient in other caſes; for, in a lad, ten years old, who, by the weight of bed-cloaths, and heating medicines, had the eruption not only checked, but alſo was ſo raving, that he could ſcarce be confined in his bed; in this caſe, he immediately gave half an ounce of the ſyr. de meconio, which, having no effect, he ordered the like doſe after the ſpace of an hour; and the ſymptoms, not yet abating, he repeated the ſame doſe, till he had taken two ounces and a half; whereupon the phrenſy ceaſed, and he afterwards recovered.

Theſe are ſufficient to demonſtrate the different treatment of ſymptomatic phrenſies. But when the febrile matter is tranſlated to the head, it can never be hurtful to uſe all theſe remedies which revel towards other parts, and to leſſen the too great heat of the head by topical applications. When, therefore, we know from the ſigns enumerated at Aph. 772, that ſuch a metaſtaſis is to be feared, it will be proper to inject glyſters, to foment the lower extremities, to irritate theſe parts by epiſpaſtics, and to divert the impetus of the humours from the head by an erect poſture of body; to ſhave the head, apply oxycrate to the forehead, and cupping-glaſſes to the thighs, legs, &c.

Of a QUINSY.

APH. DCCLXXXIII.

WHEN deglutition and reſpiration are very difficult and painful, or both together, which happens from the morbific cauſe acting on the parts ſubſervient to theſe two functions, ſeated above the ſtomach and lungs, the diſorder is called a quinſy.

APH. DCCLXXXIV.

OF this diſorder there are two kinds; one without any tumour or ſwelling either internal or external; the other, always with ſome tumor in one part or other of the fore mentioned organs.

APH. DCCLXXXV.

THE former of theſe moſtly happens in the end of chronical diſeaſes, eſpecially after profuſe and often repeated evacuations. It is attended with a paleneſs, dryneſs, and ſhrinking of the fauces; and, therefore, the nerves and muſcles are generally paralytic in this caſe. It is almoſt conſtantly a ſign of approaching death, being very ſeldom curable, and then only by ſuch remedies as fill the empty veſſels with good vital juices, and that are, at the ſame time, warm and corroborating.

It will appear at Aph. 801 and 802, that, from an inflammation within, and about the top of the larynx, or the interior membrane lining the wind-pipe, a quinſy may ariſe, without manifeſting itſelf by any tumor. But there are other kinds of quinſies very dangerous and fatal, in which there is a dryneſs, paleneſs, and ſhrinking of the fauces, without any ſigns of inflammation in the internal parts. Sometimes, indeed, there is a pain in the fauces, but without any ſwelling, the parts being rather conſiderably ſunk or collapſed. This kind of quinſy ſeldom happens but when the body has been exhauſted by chronical diſeaſes, or profuſe evacuations. Sydenham has obſerved a quinſy of this kind from the ſame cauſes after continual and intermitting fevers; and Aretæus has remarked that kind of quinſy attended with a ſhrinking of the fauces, but he does not derive the origin of it from the ſame cauſes mentioned in the text; yet if thoſe ſigns which he gives of this quinſy are compared with that deſcribed by Sydenham, it will manifeſtly appear to be the ſame. See Aretæus, lib. 1. cap. 7.

If we conſider the preceding cauſes and concomitant ſymptoms of this quinſy, it will be evident that the veſſels are ſhrunk from a deficiency of the vital fluids; for the muſcles ſerving to deglutition being rendered paralytic from inanition, are no longer able to perform their actions. Hence a ſpeedy reſtitution of the humours to fill the empty veſſels, can hardly be effected, more eſpecially as deglutition itſelf is injured, by which nouriſhment is conveyed into the body. For theſe reaſons it is evident that this ſpecies of quinſy is very rarely cured. Hippocrates in many places condemns a ſhrinking of the fauces. Porrhet. lib. 1. & Coacæ Prænot. &c.

APH. DCCLXXXVI.

THIS firſt kind of quinſy ſometimes ariſes ſuddenly without manifeſt ſigns of any diſeaſe preceding; it hardly admits of a cure; and almoſt conſtantly is a ſign of a ſuppuration of the lungs.

APH. DCCLXXXVII.

THAT kind of quinſy which ariſes with a tumor has various names, either from the nature of the tumor itſelf, or from the parts which it affects. Hence quinſies are diſtinguiſhed into œdematous, catarrhous, inflammatory, purulent, ſcirrhous, cancerous, and convulſive.

APH. DCCLXXXVIII.

THESE tumors take place in the tongue, or its muſcles; in the palate and tonſils; in the uvula and its muſcles; in the cavities of the os frontis, of the upper jaw, and of the os ſphenoides; from a polypus taking root, and growing there ſo as to ſtop up the noſtrils, depreſs the pendulous veil of the palate, diminiſh the capacity of the fauces, and ſtop up the paſſage of the pharynx and larynx: theſe tumors likewiſe invade all or ſome of the muſcles of the os hyoides; all the external, internal, common, and proper muſcles of the larynx; the interior muſcular membrane of the aſpera arteria; the ſuperior muſcles of the pharynx, the

œſophagæus

œſophagæus muſcle, and the gula itſelf; the the glands ſeated ſo near the aſpera arteria and the œſophagus, that theſe pipes may be compreſſed by their diſtention; ſuch are all the ſalival glands, and others ſcattered about theſe parts, and, laſtly, the thyroïd glands themſelves.

In the tongue, and its muſcles.] How uſeful the tongue is in deglutition has been demonſtratated in our Inſtitutes; and therefore it is evident, that when the fore mentioned tumours ſeize the tongue, or its muſcles, the deglutition muſt be difficult; and even a ſwelling upon the tongue, eſpecially about its root, may ſo compreſs the larynx as to endanger ſuffocation. I have ſeen a caſe of this kind in an aged woman who had been long afflicted with ſcorbutic ulcers in her legs, but in other reſpects healthy enough. In the afternoon ſhe perceived a kind of roughneſs upon her tongue; in the evening there was a pain about the root of it, which ſoon moved its ſeat to the tip; but the diſorder increaſed ſo ſuddenly, that, about the middle of the night, the patient was almoſt ſuffocated, and incapable of ſwallowing any thing. I ordered plentiful bleeding, and a ſharp, purging glyſter to be injected, which with the moſt emollient cataplaſms and fomentations, put a ſtop to the increaſe of the tumour; but being nothing abated eight hours after, bleeding and a glyſter of the ſame kind were again repeated. After this, the ſwelling of the tongue began to ſubſide, and became ſofter; the fever diminiſhed, which was before intenſe, and about five in the afternoon ſhe began to recover her ſpeech, and was able to ſwallow; the reſpiration began to be free, and, in a ſhort time, happily eſcaped from the moſt imminent danger.

Scirrhous and cancerous tumours in the tongue likewiſe injure deglutition; and the ſame diſorders may ariſe when the muſcles, inſerted in the tongue,

are inflamed, as I have ſometimes obſerved to happen from inflammatory tumours under the chin, obſtructing the action of the genioglosſi muſcles.

Palate.] See the uſe of the palate in Med. Inſtitutions.

Tonſils.] The tumours which produce a quinſy are moſt frequently ſeated in theſe parts.

Uvula, and its muſcles.] For an inflammation, ſuppuration, or gangrene ſometimes invade the uvula, or the circumjacent parts, and produce a dangerous quinſy. A ſcirrhous uvula has ſometimes filled the whole cavity of the mouth, and the muſcles of this part ſerving to deglutition, may be affected in the like manner.

In the cavities of the os frontis, &c.] For in theſe cavities polypous concretions or excreſcencies are frequently formed, and, gradually increaſing in bulk, intercept the free paſſage of the air through the cavities of the noſtrils, and at laſt, being further extended, may hinder both the reſpiration and deglutition.

All, or ſome of the muſcles of the os hyoides.] This is evident from the hiſtory of deglutition given in our Inſtitutes, ſect. 70, &c. but ſee Aph. 802.

The interior muſcular membrane of the aſpera arteria.] The aſpera arteria, or windpipe, conſiſts of annular cartilaginous ſegments, a part of which is wanting behind, and its place ſupplied with a ſtrong membrane. An inflammation and tumour of this membrane may hinder the free ingreſs of the air into the lungs, and by that means injure the reſpiration; and, for the ſame reaſon, deglutition will likewiſe be injured, as the œſophagus preſſes againſt the membranous part of the windpipe. See Aph. 801.

The ſuperior muſcle of the pharynx, &c.] The pharynx is dilated by various muſcles in the act of deglutition; but the ſubſtance to be ſwallowed having entered the gula, is conſtringed in that tube by the œſophagæus muſcle, and does not deſcend as through a funnel by its own weight, but is thruſt forward by

the orbicular and longitudinal muſcular coat of the œſophagus. It is, therefore, evident that theſe muſcles being inflamed or convulſed, the ſwallowing muſt be obſtructed. See Aph. 804.

The glands ſeated ſo near the aſpera arteria, &c.] That the reſpiration and deglutition may be injured by a compreſſure of theſe glands is evident enough, and will hereafter be demonſtrated when we come to treat of a ſcirrhous quinſy.

APH. DCCLXXXIX.

FROM this hiſtory of a quinſy, the reaſon is evident, why it is often attended with ſuch various, ſudden, and frequently fatal events. (783.)

APH. DCCXC.

BUT as this diſeaſe is ſo various in its nature, and produces ſuch various effects; and as it requires to be treated in different methods, and with various remedies, it will be proper to conſider each of theſe as far as the neceſſary brevity of this place will permit.

Of the WATERY QUINSY.

APH. DCCXCI.

THE watery, œdematous, or thin catarrhous quinſy, is an obſtructed or painful exerciſe of reſpiration and deglutition, with a lymphatic tumor of the parts performing theſe actions, or of the parts adjacent to them.

This kind of quinſy is rarely attended with much pain; becauſe, as we ſaid before, œdematous tumours are indolent; but if any pain attends, it generally ariſes from a diſtention of the parts made by the ſwelling. Weak, pale, and leucophlegmatic people are ſometimes ſeized with this quinſy. The uvula is generally lengthened, almoſt pellucid, and ſwelled, and ſometimes alſo the tonſils are, in like manner, ſwelled, and perfectly pale.

To this place alſo belongs the thin, catarrhous quinſy. For the ſeat of a catarrh is in the mucous membrane of Schneider which lines the internal ſurface of the noſe, fauces, œſophagus, windpipe, &c. When one is afflicted with a catarrh, this membrane ſwells, and diſtils a thin, ſerous, and often an acrid humour, which excoriates the noſe, and irritates the adjacent parts through which it paſſes. If then that part of this membrane which lines the uvula, pharynx, tonſils, &c. is affected, the ſwallowing will be injured; if the larynx, or windpipe, are affected, the reſpiration will be diſturbed, and a troubleſome cough, at the ſame time, attend. This is evident in epidemic catarrhs; for then, in ſome patients, the tonſils are ſwelled; in others, there is a troubleſome cough; and others, again, are afflicted with a ſenſe of fulneſs, and an obtuſe pain in the head, from a diſtention of this membrane in the frontal ſinuſes.

APH. DCCXCII.

THE ſeat of this quinſy, therefore, like all other ſerous defluctions, is in that part of the glands, where the lymph, ſecreted from the arteries, is collected and diſcharged.

When a watery humour is accumulated in the body, it does not reſide in the arteries and veins thro' which

which the fluids are perpetually moved, but is collected in the larger and ſmaller cavities of the body; as will be made evident when we come to treat of a dropſy. It is indeed true, that the extremities of the arterial lymphatic veſſels may be obſtructed from an imperviouſneſs of their fluids, and a lymphatic tumour formed: but, in this caſe, there will be an œdema calidum, or a true inflammation in the ſmall arterial veſſels. See Aph. 380. Such tumours may ariſe from the cellular membrane inveſting the muſcles of theſe parts, as is evident in an anaſarca; and the uvula, likewiſe, is ſometimes affected with ſuch a pale, watery tumour; and, in every part, where a ſerous humour is naturally collected, if its abſorption by the bibulous veins, or its ſecretion by the proper emiſſaries is obſtructed by any cauſe, ſuch tumors may ariſe.

APH. DCCXCIII.

THE cauſe, therefore, of this quinſy is every thing that hinders the free paſſage of the lymph; but the number and difference of theſe cauſes is very great.---Such are any compreſſion of the veins, into which, perhaps, the emiſſaries of theſe glands empty themſelves; an obſtruction formed in the follicle or cavity of the gland itſelf, from a chalky, pituitous, ſtony, fungous, and ſuch like matter there produced; an obſtruction in the emiſſary ducts from the ſame cauſes; a compreſſion of theſe parts; cold applied to the extremities of the excretory ducts, and a languid circulation of the humours.

Whatever obſtructs the abſorption of the lymphatic humours, or their motion through the veins when abſorbed, or ſtops up the cavity of the gland or

or its emiſſaries, may produce theſe tumours. Hence it is evident that the number and difference of theſe cauſes is very great, but yet may be reduced to the fore mentioned cauſes.

Cold applied to the extremities of the excretory ducts.] For all the parts of the mouth, the fauces, larynx, aſpera arteria, are perpetually moiſtened with a dew or vapour exhaling from the ultimate emiſſaries of the arteries. This is the caſe of a catarrh, which never happens more frequently than when the body is ſuddenly expoſed from a warm to a cold air. In the noſe it occaſions ſneezing, and a running; in the tonſils, pharynx, and fauces it injures deglutition; in the larynx, aſpera arteria, and lungs, it excites a cough, and ſometimes a difficult breathing, as the parts are more or leſs ſwelled.

Too weak circulation of the humours.] For the power by which the abſorbing veins imbibe the humours extravaſated into the cavities of the body, increaſes or decreaſes in proportion to the force of the circulation; hence, in acute diſeaſes, wherein the circulation is quick, the parts are dried up.

APH. DCCXCIV.

THE effects of a watery quinſy are a pale, cold, and watery tumour; a compreſſion of the adjacent parts; a hinderance of thoſe functions which depend upon a non-compreſſion of all the parts.

APH. DCCXCV.

FROM hence the ſigns both diagnoſtic (791 to 793,) and prognoſtic (794,) readily appear.

Thus

Thus a watery quinſy is leſs dangerous than that which ariſes from inflammation.—One from phlegm, obſtructing the emiſſaries, is more eaſily cured than one from a calculus.—Tumours, ſeated about the larynx, are much more dangerous than thoſe about the pharynx or uvula.

APH. DCCXCVI.

THE cure is performed by ſuch things as, 1. Reſolve, or move the obſtructing cauſes, or elſe remove them by cauſtic or inciſion. Here are proper emollient, aperient, and relaxing medicines applied in the form of a fotus, cataplaſm, gargle, injection, lotion, and vapour; and alſo frictions, cauſtics, and the ſcalpel. 2. By ſuch as diminiſh the quantity of the lymph, by draining it off in oppoſite parts, which is done by apophlegmatiſms, bliſters, dry ſudorifics externally or internally applied, by diuretics of the ſame kind, and by hydragogues. 3. By abſtaining from liquors, and a warming and drying diet. 4. By increaſing the force of the circulation by the means directed at Aph. 98 and 99.

1. Reſolve or remove the obſtructing cauſes, &c.] Whatever obſtructs the free diſcharge of the lymph may produce a watery quinſy. But if a calculus, lodged in the emiſſary of the gland, impedes the free courſe of the lymph, a reſolution of the diſeaſe cannot be expected. It is rather neceſſary to remove the calculus by inciſion. Thus alſo, if a ſcirrhous tumour occaſions this kind of quinſy by impreſſing the veins, an extirpation of the tumour ought to be attempted, either by the knife, or by cauſtics.

Emollient,

Emollient, aperient, and relaxing medicines, applied, &c.] All theſe are proper when there is reaſon to expect they may open the obſtructed veſſels of the glands or their emiſſaries, and reſtore the free courſe of the lymph. But theſe are more eſpecially uſeful in a catarrhous quinſy, when it ariſes from cold obſtructing the orifices of the exhaling veſſels. It is a moſt pernicious method in the common people to attack this diſorder with the moſt heating remedies, becauſe they think it to ariſe from cold; for thus increaſing the circulation, and urging the humours againſt the obſtructed parts before their emiſſaries are opened, they often excite a violent inflammation, and render a diſorder, ſlight in its own nature, very dangerous. Such quinſies are happily cured by taking large quantities of warm watery drinks, prepared with the roots of burdock, ſcorzonera, tragopogon, vetches, the five opening roots, the three ſanders, ſaſaphras, &c. gently aromatized. The diet ſhould be only veal broths, with endive, lettuce, &c. abſtaining from all acrid, ſalt, and indigeſtible food. The patient ſhould keep in a warm air; the noſtrils, mouth and fauces ſhould be frequently fomented with the ſteam of hot water, and emollient cataplaſms applied to the fore part of the neck. Diet and medicines here proper may be ſeen in the Materia Medica of our author under Aph. 54. N°. 4.

But when watery humours are collected in the cellular membrane of theſe parts, ſo as to occaſion large tumours, relaxing medicines are not proper, but ſuch as are directed in the following number.

2. By ſuch as diminiſh the quantity of the lymph, &c.] Though all the remedies hitherto mentioned, do evacuate the redundant lymph, yet they do not directly relieve the part affected. There are other remedies which evacuate the lymph either from the parts affected, or from thoſe which are adjacent. Such are apophlegmatiſms, which irritate the parts

ſo

ſo as to diſtil a greater quantity of the ſerous fluid, and thereby divert the quantity and impulſe of the humours from the parts affected. For this purpoſe the internal parts of the noſe may be relaxed by the ſteams of warm water, or ſtimulated by the green leaves of marjoram, pennyroyal, lavender, or the like. Or theſe herbs may be ground to a powder, and ſnuffed up the noſe. The ſame intention will be anſwered by an ounce of maſtic, with a dram or two of pellitory-root, ginger, or pepper, &c. made into little cakes, and continually chewed and rolled about the mouth. Bliſters applied to the neck, or between the ſhoulders, and behind the ears, are likewiſe proper.

3. By abſtaining from liquors, &c.] It would be in vain to evacuate watery humours, unleſs care be taken to avoid repletion.

4. By increaſing the force of the circulation, &c.] For a weak circulation is enumerated at Aph. 793, among the cauſes of a watery quinſy. How a languid circulation may be increaſed, ſee the aphoriſms cited in the text, and Aph. 611.

Of a Scirrhous Quinsy.

APH. DCCXCVII.

BUT if a ſcirrhous tumour, and one that increaſes faſt, ſeizes the glands deſcribed at Aph. 788, it is known from the ſigns of a ſcirrhus enumerated at Aph. 392; and from a knowledge of its ſituation, a future quinſy is foreſeen, and one preſent diſcovered. If an extirpation is practicable, it is the only ſafe remedy; and for internal ſcirrhous humours ſeated about

about the fauces, cauſtics are to be tried with great prudence.

When a ſcirrhous tumour is ſeated in or about the organs of reſpiration and deglutition, nothing but an extirpation can take place, which is beſt performed by the knife, as cauſtics and cauteries are dangerous, unleſs the whole ſcirrhus can be deſtroyed at once. But where this cannot be performed, as when ſuch tumours are ſeated within the fauces, either the unfortunate patient is left to his fate, or ſuch methods put in practice as might be juſtly condemned in ſlighter caſes. Actual and potential cauteries have been boldly uſed, and though they are attended with great danger, yet we are aſſured from obſervation that they are not always fatal. A farrier famed for the cure of ſcirrhous tumours ſeated in the fauces, uſed a ſolution of the common cauſtic; but the oil of tartar per deliquium, recommended in the *Materia Medica* of our author, is both milder and leſs dangerous. The ſpt. ſal. marini may likewiſe be uſed, as it powerfully reſiſts all putrefaction. See Aph. 509. Ruyſch gives us a remarkable hiſtory of the cure of a fleſhy excreſcence growing out from the upper and back part of the palate-bone. Obſ. Anat. Chyr. pag. 45.

But the moſt fatal and melancholy caſes of this kind are thoſe which ariſe in the tube of the œſophagus itſelf, or in the adjacent parts, which gradually increaſing, at length compreſs and ſtrengthen it ſo much, as intirely to ſhut it up. This diſorder uſually begins with a kind of difficulty in ſwallowing ſolid food, with a ſlight obſtruction in the œſophagus, perceptible at various heights in different patients. Sometimes the diſorder continues in this ſtate for many months, the patient being able to ſwallow meat, bread, and the like, cut very ſmall, though but ſlowly, and are yet able to ſwallow liquids eaſily enough. But by degrees the paſſage into the œſophagus

phagus becomes more and more obſtructed, ſo that the leaſt particle of bread cannot be got down. If the patient tries to ſwallow, the food ſtays in the œſophagus, and in a few minutes is brought up again with a conſiderable quantity of mucus. Hence the diſeaſe is aſcribed to tough phlegm, and every method taken to incide and evacuate the ſame. But it is evident enough that the phlegm is only the effect and not the cauſe of this diſorder. As the diſeaſe increaſes, even liquids cannot paſs, but are brought up again; and at laſt the patient falls into a maraſmus, after ſuffering a long time the puniſhments of Tantalus.

Galen deſcribes a diſeaſe of the like kind under the name of a quinſy, and relates the caſe of a young man who was cured of a purulent tumour of the œſophagus; but the cure was long and difficult; and obſerves, that people in years afflicted with this diſtemper, generally periſh.

In ſome patients I have perceived a ſcirrhous hardneſs of the œſophagus; but in others nothing more appears than a difficulty of ſwallowing. I have ſometimes perceived the glands of the neck ſwelled, and alſo the thyroide gland; but then theſe ſwelled glands did not ſeem to be the cauſe of the diſeaſe. An elderly woman was afflicted with this kind of quinſy, attended with a ſwelling of the thyroide gland. By a long continued uſe of the acetum ſcilliticum, with ſal ammoniacum, frictions, and a galbanum plaſter, the tumour began to ſoften; but after the application of ſuppurating cataplaſms, a fluctuation was perceived, and upon opening the part with a lancet, there was diſcharged a quantity of thin ichor, intermixed with ſmall white granulated maſſes; and although the patient was relieved by this diſcharge, yet the diſeaſe proved fatal in the end.

The cauſes preceding this diſeaſe are not very numerous. In the medical eſſays there is a caſe of this kind

kind from an immoderate uſe of ſpirituous liquors, nor is it improbable that the œſophagus may be may be hardened into a ſcirrhus by an abuſe of them, as fermented ſpirits both coagulate the blood, and contract the ſolids; but it muſt be confeſſed, that few drunkards are afflicted with this diſorder. I have ſeen the delutition hindered in a healthy young woman, only from expoſing her neck to a cold north wind. The diſorder gradually increaſed without any viſible tumour, and after trying a great many remedies to no purpoſe, ſhe at laſt died. May not the drinking of coffee, tea, &c. very hot, be the cauſe of this diſeaſe, by ſhrinking the ſolids, and coagulating the fluids? But this diſorder frequently happens when the cauſe of it cannot be diſcovered.

I have myſelf tried various remedies in this kind of quinſy; but all without ſucceſs. The tartarus, tartariſatus, and regeneratus, the moſt penetrating ſoaps, as that of ſtarkey, Helmont's tinct. ſal tartar. ſal ammoniac, and its ſpirit ſaturated with aut. diſtill. ſo uſeful for diſſolving concretions, have here been of no ſervice. Mercurial unctions, plaſters of the ferulaceous gums with mercury, applied to the neck, hydrogogue purges, and even a ſalivation have been tried, bnt without ſucceſs. Lubricating and emolient decoctions with oil of almonds have been ſerviceable, yet have contributed nothing towards a radical cure.

If we conſider what has been obſerved in diſſecting the bodies of thoſe who have died of this diſeaſe, it will not appear wonderful that ſo obſtinate a diſeaſe eludes the force of the moſt efficacious remedies. Tulpius found a hard tumour between the aſpera arteria and œſophagus; and a livid one, like a cancer, ſpreading its roots round the gula, which it ſo cloſely preſſed, that there was not room to admit a probe. Obſer. Med. lib. i. cap. 44. See alſo Med. Eſſays, vol. 2d and 3d.

Of

Of an Inflammatory Quinsy.

APH. DCCXCVIII.

BUT when the glands or muſcles enumerated in Aph. 786 are ſeized with an inflammation, then there ariſes a particular kind of quinſy, which is highly acute, violent, and often inſuperable.

APH. DCCXCIX.

THE cauſe of this quinſy in general is, 1. Every thing capable of producing any kind of inflammation. 2. Whatever determines the cauſes of the inflammation more particularly to the parts enumerated in Aph. 788, and principally to the larynx, pharynx, os hyoides, and the muſcles of theſe parts, and the ſuperior parts of the aſpera arteria. Such are a diſpoſition to inflammatory diſeaſes peculiar to young people abounding with blood, and of a ruddy complexion; a frequent and violent exertion of theſe parts by ſpeaking, ſinging, crying aloud; by hard riding on horſeback againſt a ſtrong and cold wind, blowing of trumpets, playing on the flute, hard labour in a cold air, and by a ſultry heat followed with intenſe cold; a dryneſs of the fauces from a hot ſcorching air, or in an inflammatory fever.

2. Beſides the general cauſes of inflammation, there are others which may produce an inflammatory quin-

ſy, by determining all the above-mentioned cauſes towards the organs of deglutition and reſpiration; though we do not underſtand the reaſon of this determination. For example, in epidemic inflammatory quinſies, the patient is ſeized with a cold fit, and ſoon after a fever follows, with a pain and inflammation of the fauces; but who can explain from the theory of phyſic, why the morbific matter ſhould be determined to thoſe parts rather than to any other? See Aph. 593.

But when inflammatory quinſies ariſe from a violent exertion of the muſcles and organs, ſubſervient to reſpiration and deglutition, as in ſpeaking, ſinging, &c. the cauſe is evident, as we underſtand the action of theſe parts. Hard riding againſt a cold wind, ſultry heat followed with intenſe cold, a dryneſs of the fauces from a hot ſcorching air, are cauſes which at all times may produce an inflammatory quinſy.

APH. DCCC.

WHEN a quinſy is produced from the cauſes above-mentioned, it creates various, and often dreadful ſymptoms, according to the different ſtructure and uſe of the part.

APH. DCCCI.

THUS if the internal muſcular membrane of the aſpera arteria only is inflamed, without injuring other parts, there then ariſes a tumour, heat, pain, and an acute ardent fever; but yet without any external ſigns of the diſeaſe. In this caſe, the voice becomes ſhrill, ſqueaking, and wheeſing; inſpiration is attended with great pain; the reſpiration is ſmall, frequent,

quent, high, and performed with great labour. Hence the circulation of the blood through the lungs becomes difficult; the pulſe wonderfully and quickly wavering; great anxieties attend, and death ſoon follows. This is one of thoſe kinds of quinſies which are the moſt fatal, and which ſhews itſelf by no external appearance; but the nearer it is ſeated to the glottis and epiglottis, the more fatal it is.

As the principal uſe of the aſpera arteria is freely to tranſmit the air for reſpiration, and the formation of the voice, it is evident, that when the cavity of this part is ſtraitened by an inflammatory tumour, the voice muſt be altered, and become ſharper, &c.

APH. DCCCII.

BUT if the larynx chiefly be violently inflamed, and the diſorder fixes itſelf in the white muſcle of the glottis, and at the ſame time, in the fleſhy muſcles which ſerve to ſhut it, there ariſes a moſt dreadful quinſy, which ſuddenly ſtrangles the patient. The ſymptoms of this quinſy are the ſame with thoſe of the preceding (801;) great pain in elevating the larynx when the patient attempts to ſwallow, which is increaſed by ſpeaking or crying aloud. The voice is very ſhrill and ſqueaking, and death very ſpeedily follows with the greateſt anguiſh. This is the worſt of all quinſies, without any external ſigns.

Theſe two quinſies have ſeveral ſymptoms in common to each other, and if the inflammation is ſeated in the upper part of the aſpera arteria, it will be dif-

ficult to make the diſtinction. But an extreme ſhrill and ſqueaking voice, when the larynx is inflamed, may point out the difference. However, if the phyſician ſhould be deceived in diſtinguiſhing theſe two quinſies, it will be of no conſequence, as they are both of a moſt fatal tendency, and require the ſame method of cure. Theſe moſt fatal quinſies do but ſeldom happen; whereas thoſe we are to treat of in the following aphoriſms are much more frequently obſerved.

APH. DCCCIII.

IF the muſcles only which ſerve to draw up the os hyoides and larynx are violently inflamed, then the following ſymptoms attend: the reſpiration is tolerably eaſe; deglutition extremely painful when the patient firſt attempts to perform it; there are alſo the ſigns of inflammation in general, and the muſcles of the above-mentioned parts are likewiſe inflamed, as will evidently appear upon inſpection.

Although this kind of quinſy is not ſo fatal as thoſe already deſcribed; yet it is not without danger, both on account of the painful deglutition, and its tendency to fall upon the lungs by a dangerous meraſtaſis, of which we ſhall treat hereafter.

APH. DCCCIV.

BUT when the pharynx only is inflamed, the ſpecific ſigns are apparent upon inſpecting the fauces. The reſpiration is eaſy enough; but deglutition is painful, and even impoſſible to be performed, the liquids taken returning through the noſe, or being forced into the aſpera arteria excite a violent cough.

Hence

Hence the patient is obliged to abſtain from aliments; whence a dryneſs and acrimony of all the humours; the fever not very intenſe, and the diſeaſe continues longer before it proves fatal.

When the pharynx only is inflamed, there appears no diſorder in the organs of reſpiration. The patient breathes freely, and the deglutition only is painful, and in very bad diſorders of this part quite impoſſible, all liquids being returned by an open paſſage from the pharynx into the noſtrils, and if they get into the rima of the larynx, a moſt violent and ſuffocating cough will follow.

When the inflammation is not ſeated in the pharynx, but in the œſophagus, even then the like ſymptoms follow, which the patient is able to diſtinguiſh from the pain he feels when the aliments ſwallowed have reached ſo far, as to touch the part affected.

APH. DCCCV.

BUT if the tonſils, uvula, and the velum pendulum membranoſum of the palate, with its four muſcles called pterygo-ſtaphylini, are greatly inflamed, then almoſt the ſame ſymptoms appear as when the pharynx is inflamed (804,) the reſpiration is uneaſy, difficult, and cannot be performed through the noſe at all, or at leaſt without ſome trouble, and through the fauces with difficulty. What the patient attempts to ſwallow, is returned through the mouth, from the ſtricture and intenſe pain. There is a continual and copious flux of phlegm into the cavities of the tonſils, with a perpetual

hawking; an acute pain in the internal ear, and in the paſſage leading to it from the fauces; a crackling noiſe in the ear when an attempt is made to ſwallow, and freqently an intire deafneſs. This kind of quinſy is in our days often the conſequence of the *lues venerea*, and much to be dreaded.

This is the moſt frequent of all quinſies, and much leſs dangerous than the preceding, though it is often very troubleſome, and when both the tonſils are ſwelled at the ſame time, not without ſome degree of danger.

APH. DCCCVI.

BUT if all theſe inflammatory kinds of quinſies ſeize the patient together or ſucceſſively, it is eaſy to conclude, that the diſeaſe will be ſo much the more ſevere as the greater number of parts are affected, and that then alſo there will be a greater number of ſymptoms, and thoſe the moſt ſevere.

APH. DCCCVII.

FOR then the return of the blood in the external jugulars being obſtructed, or theſe veſſels compreſſed, there follows a ſwelling of the face, lips, tongue, and fauces. The tongue is thruſt out, diſtorted, and inflamed; the eyes look red, ſwell, and protuberate in a frightful manner. The brain, from the ſame cauſes, is oppreſſed; hence the ſight, hearing, and touch are rendered dull; the patient becomes delirious, gapes, ſnores, and is unable to lie down

for fear of ſuffocation. There is a redneſs, ſwelling, pain, and pulſation, often conſpicuous in the throat, neck, and breaſt; whence the jugular and frontal veins, with thoſe under the tongue are diſtended, and become varicoſe.

All the ſymptoms obſerved in the worſt inflammatory quinſies are accurately collected by Hippocrates [a] and Aretæus [b].

APH. DCCCVIII.

BUT every quinſy runs through the uſual ſtages of inflammation, and terminates in the ſame manner, either by a reſolution, ſuppuration, gangrene, or ſcirrhus. See Aph. 387, 388.

APH. DCCCIX.

THEREFORE, as ſoon as we know by the ſigns enumerated in Aph. 801, 802, that the aſpera arteria, or larynx are affected, we muſt immediately examine, whether as yet there is no more than a ſimple inflammation; (ſee Aph. 382 to 384) if ſo, a reſolution muſt be attempted with the greateſt expedition, by the moſt efficacious medicines. 1. Therefore a large quantity of blood is immediately to be taken away, and repeated, until the weakneſs, paleneſs, coldneſs, and callapſion of the veſſels ſhew that the remaining ſtrength is not able either to increaſe the tumour, or rigidity of the

[a] De morbis, lib. 3. [b] De cauſis & ſign. Morb. Acut. lib. i. cap. 7.

veſſels. 2. The belly muſt be kept open by ſtrong purges, or glyſters frequently repeated. 3. The diet and drink muſt be very thin and light. 4. The remedies ought to be nitrous and ſubacid. 5. Warm, moiſt, and emolient vapours ſhould continually be drawn in by the mouth; to which ſhould be added external fomentations, and ſuch means as derive towards other parts, as bliſters, cupping, and ſynapiſms applied to the neck and breaſt.

1. Veneſection is here the firſt and principal remedy, which ought to be performed at the very firſt attack of the diſeaſe; that is, when the quinſy ſeizes the aſpera and the larynx; for we ſhall here treat firſt of the method of curing the worſt and moſt ſuddenly fatal kind of quinſy, becauſe if this is well underſtood, any one may eaſily know what ought to be done in the other kinds of inflammatory quinſies.

As the frontal veins, with the jugulars, and thoſe under the tongue are often much ſwelled, ſome phyſicians adviſe the immediate opening of theſe veins, eſpecially the *raninæ*, becauſe, by this, the parts neareſt to thoſe affected are ſuddenly emptied. Others of conſiderable names have condemned this method; and, even among the ancient phyſicians, different opinions ſeem to have ſubſiſted upon this ſubject. However, the moderns firſt draw blood from the arm, or foot, before they open the veins under the the tongue, the frontal, or the jugular.

2. How uſeful purging is in reſolving inflammations was demonſtrated at Aph. 396, & ſeq. But it is here to be remembered, that plentiful bleeding ought always to be premiſed before purging. Hence Sydenham, after bleeding in the arm, and under the the tongue, dared not to give a purge the next morning, unleſs the fever and pain in ſwallowing were much abated. But when the ſwallowing becomes ſo difficult

difficult that the patient cannot take a cathartic, then glyſters of the like nature will anſwer the ſame purpoſe, if they are frequently injected.

3. As an inflammatoty quinſy is a moſt acute diſeaſe, and ſpeedily kills, if it is not quickly diſperſed, we need not be very ſolicitous about the diet; for the patient generally refuſes all kinds of food, on account of the pain they give in the action of deglutition, and the ſtrength may be eaſily ſupported for ſo ſhort a time by the uſe of drinks only, ſuch as the whey of milk, or milk diluted with three times the quantity of water, or very thin emulſions drank warm. But ſee Aph. 396. N°. 5. and Aph. 602.

4. Nitre is of great uſe in the cure of inflammations, and is therefore particularly recommended by all phyſicians in the cure of quinſies. Acids likewiſe diluted with a great quantity of water, ſo as not too much to irritate the pained fauces, are here very beneficial. Not only the vegetable acids, but alſo thoſe of the foſſil kind, as the ſpirit of ſea ſalt, and more eſpecially the ſpirit of ſulphur by the bell, are greatly extolled. For although theſe acids coagulate the blood when they are mixed with it, yet we learn from experience that they are of great uſe if the inflamed fauces are only touched with them. Thus Sydenham orders the inflamed parts to be touched with mel roſar. ſtrongly acidulated with ſpt. ſulphur. and afterwards a mild cooling gargle to be held in the mouth. Medicines compoſed of red roſes have an aſtringent force, and with the acid ſpirit of ſulphur conſtringe the parts to which they are applied; and at the ſame time repel into the larger trunks the impervious particles obſtructing the ſmaller veſſels. See Aph. 96. N°. 6. But theſe acrid remedies cannot he ſafely uſed in quinſies ſeated in the larynx and aſpera arteria; yet they are here mentioned, becauſe we deliver the general cure of inflammatory quinſies; but are proper when the tongue, fauces, palate, tonſils are affected, and frequently ſlight inflammations

tions of theſe parts are cured by theſe remedies only, without either bleeding or purging.

5. See what has been ſaid of the uſe of vapours in attenuating the obſtructing matter at Aph. 398. N°. 3. But this remedy is more eſpecially uſeful in this kind of quinſies, becauſe the vapours drawn in, touch the inflamed parts. Elder-flowers are here particularly uſeful, becauſe they exhale a cooling vapour, and yet volatile enough for the cure of an eryſipelas, or phlegmon. A formula of this kind may be ſeen in our author's *Materia Medica*, under the preſent aphoriſm. Fomentations of the ſame, externally applied, will likewiſe be proper, either to the neck or breaſt, or to both, in order to derive the quantity and impetus of the humours towards the external parts. See Aph. 396. N°. 4. One would imagine that every kind of tranſlation in an inflammatory quinſy ſeated in the larynx, or aſpera arteria, would be ſalutary; yet it appears from obſervation, that almoſt all theſe tranſlations rather protract the fatal period of the diſeaſe, than promiſe a happy event. All this was obſerved by Hippocrates in the Coacæ Prænotiones.

APH. DCCCX.

BUT that kind of quinſy deſcribed at Aph. 803, which invades only the muſcles ſerving to elevate the os hyoides and larynx, is ſeldom ſo dangerous, as thoſe which affect the aſpera arteria and larynx deſcribed at Aph. 801, 802; yet it requires the ſame remedies, only not ſo powerful; but here anodyne, relaxing, and emollient cataplaſms are more particularly neceſſary.

It was obſerved at Aph. 803, that this quinſy is often dangerous, being very liable to ſudden and fatal

tal tranſlations of the morbific matter upon the lungs. For this reaſon emollient cataplaſms to the throat and neck are here more eſpecially uſeful, to draw the matter of the diſeaſe thither, and prevent its falling upon the lungs. Gentle ſtimulants may be alſo added in the cataplaſms; the form of a proper cataplaſm may be ſeen in our author's *Materia Medica*, under the preſent aphoriſm.

APH. DCCCXI.

LASLY, while the quinſies deſcribed at Aph. 804, 805, 806, are ſtill attended with inflammation, then the remedies recommended at Aph. 809, 810, ought to be jointly applied; always remembering to keep the mouth and fauces continually moiſt by the mildeſt attenuants, mixed with a due proportion of nitre, by warm watery diluents, and by the fat relaxants, which may be held quietly in the mouth, or uſed in the form of a gargariſm, or injected with a ſyringe: and this ought to be done without ceaſing, to prevent the parts from growing dry.

When only the pharynx, tonſils, uvula, and the velum pendulum, palate, &c. are inflamed, the diſeaſe is leſs dangerous; but the ſame method of cure is required as in the preceding. After bleeding, an antiphlogiſtic purge ſhould be given; and theſe are to be repeated as the violence of the diſeaſe may require. But in the other kind of quinſies, humectants can hardly reach the parts affected, except in the form of a vapour. In this they are of great benefit, and may be applied immediately to the parts affected; therefore decoctions of the rad. alth. malv. ſem. lini, and the like, with nitre, vinegar, ſal polychreſt,

lychreſt, &c. ſo proportioned as not to irritate the inflamed parts by their ſtimulus. Infuſions of the flor. ſambuc. rhæados, melilot, with honey, or Ternelius's ſyrup of marſh-mallows are here of the greateſt uſe; but all theſe muſt be taken warm, cold things being here hurtful, by conſtringing the veſſels. When the tonſils, uvula, &c. (805) are much ſwelled, with a copious diſcharge of tough phlegm, theſe infuſions muſt be continually injected by a ſyringe, in order to prevent as much as poſſible a dryneſs of the inflamed parts. Boerhaave ſaw a patient whoſe tonſils and uvula were ſo much inflamed and ſwelled, as to endanger a ſuffocation; yet by a conſtant uſe of an emollient decoction thrown into the mouth by a ſyringe, he was enabled to ſupport the diſeaſe till the abſceſs broke. Emollient cataplaſms applied to the neck, are alſo very beneficial here; for by theſe the inflamed tonſils are drawn outward, and the ſtricture of the fauces leſſened. Forms of ſuch a decoction, and gargle, may be ſeen in the *Materia Medica*, under the preſent aporiſm.

There is a kind of quinſy which ſeizes the palate, uvula, and tonſils, and which for the moſt part is eaſily cured, though the parts affected are often painful enough. This quinſy frequently attacks ſcorbutic habits, and ſometimes a great many people at the ſame time, eſpecially in the ſpring, and in a warm moiſt air. It begins with a ſlight fever, which goes off in a few hours; then the fauces grow painful in one part or other; and a white ſpot appears, the contiguous parts being very red, and extremely painful. If the diſeaſe is neglected, the ſpots ſpread, and frequently eat deep into the affected parts. Spirit of ſulphur diluted with water, and mixed with the rob of elder-berries and nitre, happily cures theſe quinſies. But if the parts are deeply ulcerated, and exhale a putrid ſmell, thirty or forty drops of ſpt. ſal. marin. mixed with an ounce of mel. roſar. and applied to the parts affected, will immediately ſtop the ſpreading of this putrefaction. A P H.

APH. DCCCXII.

IF all theſe remedies are neglected, applied too late, or not attended with good effects; if the diſeaſe is recent, threatens ſtrangulation, and is ſeated in any part above that where the inciſion ought to be made, and attended with the worſt of the ſymptoms enumerated at Aph. 807, and without the ſigns of a gangrene, then muſt bronchotomy be immediately performed, after making a ſad and doubtful prognoſtic.

APH. DCCCXIII.

WHICH is made in the aſpera arteria, about a thumb's breadth below the inferior edge of the larynx, having firſt laid open the ſkin and integuments, removed the muſcles, and cut through the interſtice of the cartilaginous rings of the aſpera arteria, inſerting therein a ſmall ſilver canula; and having removed the cauſe which required the operation, the cure is compleated by healing up the wound. In the mean time, nouriſhing glyſters are to be injected, if the delutition is difficult.

Thoſe who are deſirous to know the method of performing bronchotomy, may conſult Heiſter and other chyrurgical writers. Having now finiſhed all that relates to the diagnoſis, prognoſis, and cure of an inflammatory quinſy, it remains for us to conſider the various ways in which this diſeaſe, like other inflammations, may terminate, namely, by ſuppuration, gangrene, or ſcirrhus; from whence again a quinſy receives a different denomination.

Of

Of a Suppurative Quinsy.

APH. DCCCXIV.

BUT if the diſorder has advanced ſo far, that the part affected begins to ſuppurate, a diſcharge of the abſceſs muſt be procured by art, and the general remedies propoſed at Aph. 402 to 412 applied; but more eſpecially by the conſtant uſe of emollient gargles, and relaxing cataplaſms, and by opening the part in the moſt proper place, or by bronchotomy.

An inflammatory quinſy muſt always be reſolved, if poſſible; but ſometimes the diſeaſe is ſo violent, or is neglected at the beginning, that there is no room to carry it off by a reſolution. In this caſe, a ſuppuration is to be promoted as faſt as poſſible, that the patient may be ſpeedily relieved. He is therefore continually to hold in his mouth a warm gargle, prepared from linſeeds, mallows, marſh-mallows, and the like emollient remedies; for thus the inflamed parts will be fomented, their dryneſs prevented, and the crude matter changed into pus. Emollient cataplaſms, though they cannot be immediately applied to the parts to be ſuppurated, are yet of great efficacy by relaxing and ſoftening the external parts, which yield the more eaſily, and make way for thoſe which are ſwelled internally.

It was obſerved before, that, to promote a ſuppuration, the motion of the vital fluids was ſo to be regulated, as to be neither too ſluggiſh, nor too violent; yet we are ſometimes obliged to depart from this method in a ſuppurative quinſy, and even to repeat veneſection, though we are ſure that an abſceſs is forming.

ing. For the ſwelling of the parts being increaſed during the ſuppuration, often excites a new inflammation by compreſſing the adjacent parts; for which reaſon, we are obliged ſtill further to empty the veſſels, in order to prevent a ſuffocation.

An abſceſs of theſe parts generally breaks into the mouth; but the time of maturation I have found to be various. Sometimes it breaks ſpontaneouſly towards the end of the fifth day; at other times it happens later; but it ſeldom exceeds the ninth day before it comes to a perfect maturation, eſpecially if the fauces are continually fomented with emollient gargles.

When it appears that matter is formed and fit to be diſcharged, it will be proper to perforate the part with a proper inſtrument. But when the abſceſs is ſeated lower, in the œſophagus itſelf, we cannot attempt to open it, but endeavour to break it as ſoon as poſſible, by the uſe of the moſt emollient remedies. A remarkable caſe of this kind is related in the Medical Eſſays, vol. i. pag. 274.

APH. DCCCXV.

BUT that kind of quinſy which invades the internal membrane of the aſpera arteria, the pharynx and its muſcles, rarely comes to a ſuppuration, but is in the beginning either removed by a reſolution, or proves fatal. See Aph. 801, 802.

For the inflammatory ſymptoms increaſe ſo faſt, that the patient is ſuffocated before the abſceſs can be brought to maturation.

Of

Of a Gangrenous Quinsy.

APH. DCCCXVI.

IF, at length, the cauſes of a quinſy enumerated at Aph. 799, are increaſed, and ſeated in the aſpera arteria, the larynx, and its muſcles, or even in the external parts, 804, 805, a fatal gangrene often enſues; which we know, 1. From the general ſigns of a gangrene appearing in the affected parts, and injuring their functions. 2. From the ſymptoms proper to the diſeaſe, as when a tumour and redneſs, at firſt conſpicuous, diſappear of a ſudden without any manifeſt cauſe; when the pain likewiſe goes off in the ſame manner; when the fauces ſuddenly appear equal and ſmooth; or when they become dry, ſhining, and livid; then the diſorder is too far advanced to admit of a cure. See Aph. 426 to 430.

APH. DCCCXVII.

A QUINSY ariſing from the cauſes enumerated in Aph. 392, terminates in a ſcirrhus of the tonſils, uvula, or palate, which is eaſily known, but with difficulty cured, eſpecially if the ſcirrhus degenerates into a cancer.

This ſometimes happen after inflammatory quinſies that have been improperly treated, or when the inflamed parts have not been ſufficiently guarded againſt the cold air. Repellent and aſtringent remecines have produced a ſcirrhus in theſe parts, though they

they are of ſignal benefit in ſome kinds of quinſies. For this reaſon, the common people have indiſcriminately made uſe of them, and other aſtringents, in every diſorder of the throat, imagining that all quinſies ariſe from a relaxation of the uvula. But ſee Aph. 209, N°. 4. where we have ſhewn in what caſes aſtringents may be uſeful.

Of a CONVULSIVE QUINSY.

APH. DCCCXVIII.

IF the nerves, which move the organs of deglutition or reſpiration, are unable to perform their functions, their ariſes a paralytic quinſy; ſuch a quinſy is ſaid likewiſe to happen from a luxation of the ſecond, or any other vertebra of the neck, inward. If the muſcles of the pharynx or larynx are from any cauſe whatſoever ſeized with convulſions, there follows a ſudden and ſuffocating quinſy; this frequently happens to thoſe who are ſubject to epileptic, convulſive, hyſteric and hypochondriac fits, in whom it frequently goes off, and returns again. It is cured chiefly by the ſame remedies with which the original diſeaſes are removed.

This kind of quinſy frequently attends an hemiphlegia, the patient being unable to ſwallow but with the greateſt difficulty, all the drink, ſaliva, &c. running out from the ſides of the mouth again. Sometimes there happens a particular palſy only of the muſcles of deglutition. Galen mentions ſuch a diſorder, and calls it a weakneſs of the gula[a]. Tulpius

[a] De locis affect. lib. 5. cap. 5.

obſerved the muſcles of deglutition ſo greatly relaxed in a woman, fifty years old, after a vomiting, vertigo, and ſpaſmus cynicus, that ſhe could not ſwallow a ſingle drop, although there was neither pain, tumour, nor any ſtraitneſs in the gula[a]. The patient expired on the ſeventh day. I have ſeen a caſe ſimilar to this in a woman forty-five years old, otherwiſe in good health. When ſhe was going to dinner, with a good appetite, ſhe found her ſwallowing ſuddenly obſtructed, without any pain or tumour. Many remedies were tried, but the diſeaſe could not be entirely removed; for ſhe could not ſwallow liquids at all, yet was able to get down large mouthfuls of ſolid food. How the diſorder ended I know not, as ſhe lived at a diſtance from me, and did not, agreeable to her promiſe, inform me of the event. But Jacobus, who had ſeen this diſeaſe, obſerves, that ſuch patients gradually waſte away; yet Stalpart Vander Wiel relates the caſe of a young woman who recovered at laſt of this diſorder, and lived afterwards in good health[b]. What remedies are proper in a paralytic quinſy we ſhall declare hereafter, when we come to treat of a palſy.

To this place belongs that quinſy which is ſaid to ariſe from a luxation of the proceſſus dentiformis, or ſecond vertebra of the neck; for as the pharynx and œſophagus lie upon the vertebræ of the neck, it is evident that they muſt be compreſſed or ſtraitened from ſuch a luxation. Beſides, the medulla ſpinalis may be compreſſed from the ſame cauſe, and thoſe muſcles which receive the nerves from below the compreſſed part may alſo become paralytic. But although this diſeaſe very rarely happens, yet it cannot be denied but that it has ſometimes been obſerved; though it is, at the ſame time, difficult to comprehend how this can happen by a diſeaſe without ſome external violence. Hippocrates ſeems to have obſerved this diſeaſe; for, in enume-

[a] Obſerv. Med. lib. pag. 79. [b] Obſerv. tom. 2. Obſerv. 27.

rating

rating the diſeaſes of children after dentition, he mentions alſo *luxations of the vertebræ inwards, which are ſeated next to the occiput*[a]. And, in another place, he obſerves, that thoſe who were afflicted with a quinſy, " had the vertebræ of the neck turned in-" ward, ſome more, ſome leſs, with a viſible cavity " in the neck, which was painful when touched. But, " in others, the diſorder was below the os dentatum, " in whom it was not ſo ſevere[b]." I once ſaw this kind of quinſy in an infant ten months old, whoſe head was bent backward, the throat protuberant, and a manifeſt cavity appeared in the neck; but I could not diſtinguiſh which of the vertebræ were luxated inwards. The infant could not ſwallow any thing, and the diſorder followed after violent convulſions. That ſuch luxations of the vertebræ ſhould enſue from convulſions in tender infants is not at all wonderful, when, in adults, and ſtrong people, afflicted with epilepſies, the limbs have been diſtorted, diſlocated, &c. We are likewiſe aſſured, from medical obſervations, that tumours, formed in the internal parts of the body, have removed the vertebræ of the neck out of their places, which they have recovered again when theſe tumours have been diſperſed. A remarkable inſtance of which may be ſeen in the Memoirs of the Royal Academy of Sciences at Paris for the year 1731.

If the muſcles of the pharynx and larynx are from any cauſe convulſed, there ariſes a ſudden ſuffocating quinſy; which, though troubleſome, is yet very ſeldom dangerous in its own nature, unleſs it ſeizes thoſe, who are taken with a tetanos or opiſthotonos. Nothing more frequently occurs than hyſteric riſings in the throat, which are happily cured by ſuch remedies as avert the great impetus of the ſpirits upon the muſcles of theſe parts, and ſtill their inordinate motions; ſuch as caſtor, galbanum, aſſafætida, &c.

[a] Sect. 3. Aph. 26. [b] Epid 2.

wh ch frequently remove theſe diſorders in a moment. But I have ſeen ſome women affected with this kind of quinſy, whoſe nervous ſyſtem has been ſo very irritable, that antihyſteric medicines have rather increaſed the diſeaſe; yet, in this caſe, the application of cupping-glaſſes, without ſcarification to the neck, has almoſt inſtantly removed the diſorder.

But if malignant humours collected in any part of the body, more eſpecially about the præcordia, produce convulſions by conſent of parts, and thence diſturb all the actions of the brain, theſe humours muſt be expelled by vomits and purges, which are generally of bad conſequence in convulſions ariſing from a diſturbed motion of the ſpirits only. Such a caſe is deſcribed in the Edinburgh Medical Eſſays, tom. 1. pag. 277.

APH. DCCCXIX.

FROM this hiſtory of a quinſy we may underſtand the following obſervations of Hippocrates.

A quinſy, without any viſible ſign, manifeſting itſelf only by a ſuffocating orthopnoea, with an acute fever, and great pain of the head or thighs, without good ſigns, is ſpeedily fatal, namely, on the firſt, ſecond, or third day.

For then the inflammatory tumour ſeizes the larynx, or the internal membrane of the aſpera arteria.

A quinſy coming upon other inflammatory diſeaſes, or when the aſpera arteria, or the larynx is greatly inflamed (801, 802,) or ariſing from the cauſes enumerated at Aph. 803, 804, 805, is fatal.

A diſeaſe is ſaid to be ſymptomatic, or to come upon another, when the firſt ſtill continues; therefore

fore, ſuch an addition denotes an increaſe of the former, and that other parts are injured. But as the cure of a quinſy requires copious blood-letting, cooling purges, &c. the patient, weakened by the preceding diſeaſes, is unable to bear a repetition of theſe evacuations.

But when an inflammatory quinſy ſeizes the muſcles which draw up the os hyoïdes and larynx, or the pharynx, or the tonſils, uvula, velum pendulum palate, or the four pterygoſtaphylini muſcles; and increaſes ſo as to affect the aſpera arteria or larynx, then the diſeaſe becomes fatal. Nor is there is much room to hope, even when the inflammatory matter, by a metaſtaſis, leaves its firſt ſeat, and is depoſited upon the larynx or aſpera arteria, as is evident from what has been ſaid at Aph. 801 and 802.

A quinſy that excites a froth in the mouth; that diſcharges a thin ſerum; and in which the fæces come away inſenſibly; that ſeizes the patient in a very acute fever, without any apparent ſign; and in which the ſwelling, redneſs, and pulſation in the fauces or tongue diſappear, yet attended with a ſuffocation, is always and ſpeedily fatal.

We do not here mean that frothy, phlegmatic ſpitting, mentioned at Aph. 805, but that thick froth collected about the mouth and lips of people while they are dying, which, in a quinſy, denotes ſuffocation and death. A continual diſcharge of a thin ſerum from the mouth is likewiſe a very bad ſign, and ſhews that the larger veins are greatly compreſſed, whence all the bad conſequences enumerated at Aph. 807, may ſpeedily follow.——An evacuation by the bowels, without the knowledge of the patient, is condemned by Hippocrates as fatal; and this is more eſpecially true in quinſies, where it denotes immediate ſtrangulation; for thoſe who are

ſtrangled by the halter diſcharge the fæces contained both in the inteſtines and bladder.

We have ſhewn that a quinſy is fatal when it comes ſymptomatically upon other inflammatory diſeaſes. It is alſo equally true when a quinſy ariſes in very acute fevers, even though they are not inflammatory. When the ſwelling, redneſs, and tumour diſappear, then the quinſy, which only injures deglutition, is changed into that which interrupts the reſpiration, and which, in this caſe, is always fatal.

Of a True Peripneumony.

APH. DCCCXX.

IF a true inflammation is formed in thoſe pulmonary veſſels ſuſceptible of inflammation, the diſeaſe is called peripneumony.

APH. DCCCXXI.

THESE veſſels are the bronchial and pulmonary arteries, and their lateral lymphatic veſſels.

APH. DCCCXXII.

HENCE we may conceive two kinds of peripneumonies, one ſeated in the extremities of the pulmonary artery, the other in thoſe of the bronchial.

APH. DCCCXXIII.

AND it directly appears, that the firſt is very dangerous; but that the latter is attended with leſs danger, yet the one may produce the other; and that they may have many cauſes in common.

For

For when the blood ſtops in the extremities of th pulmonary arteries, the circulation of the blood thro the lungs, from the right to the left ventricle of the heart, is obſtructed, which renders this kind of peripneumony extremely dangerous. But when it is ſeated in the bronchial arteries, the circulation thro' the lungs is not ſo immediately to be affected, and, therefore, the danger is leſs: yet the worſt conſequences may follow from this laſt kind, unleſs it can be removed by a mild reſolution, for all other ways of terminating an inflammation of the lungs are fatal, or produce the moſt ſtubborn, chronical diſeaſes. Beſides an inflammation of the bronchial arteries may eaſily affect the branches of the pulmonary artery, which are not only contiguous, but alſo joined, in many places, by anaſtomeſes; hence theſe two kinds of peripneumonies may ariſe from many cauſes in common, although there are ſome which rather affect the branches of the pulmonary artery, or the motion of the blood through them, as we ſhall ſee in the following aphoriſm.

APH. DCCCXXIV.

THESE numerous cauſes may be reduced, 1. To the general cauſes of all inflammations. 2. To thoſe which chiefly affect the lungs, ſuch are too great moiſture, dryneſs, heat, cold, gravity, or levity of the air, or an atmoſphere replete with cauſtic, aſtringent, or coagulating exhalations, hurtful to the lungs; chyle from groſs, dry, and viſcid aliments, with or without a mixture of acrid particles; violent exertions of the lungs by running, wreſtling, ſtraining, ſinging, calling aloud, and riding faſt on horſeback againſt the wind; coagulating, cauſtic, and conſtringing poiſons received into the

veins leading to the heart; violent perturbations of the mind; a quinſy with an oppreſſion of the breaſt, and an orthopnoea; a violent pleuriſy, and an inflammation of the diaphragma.

1. We have treated of all theſe in the hiſtory of inflammation from Aph. 375 to 380.

2. Too great moiſture, dryneſs, &c.] A moiſt air weakens the fibres of the pulmonary veſſels, which are therefore leſs able to reſiſt the impelled fluids. In this caſe, the relaxed veſſels may admit groſſer particles of the fluids than can paſs thro' their extremities, and this more readily will happen, if the air be hot as well as moiſt. But if the air is ſo dry as to deprive the internal ſurface of the aſpera arteria and bronchia of its natural moiſture, theſe parts being thus rendered leſs flexible, will be with more difficulty expanded by the inſpired air. A cold air, is, above all cauſes, moſt apt to produce this diſeaſe; for by cold the particles of the blood are apt to concrete, hence pleuriſies and peripneumonies are moſt frequent in the winter.——An air too heavy makes a greater preſſure upon the veſſels of the lungs, and increaſes the reſiſtance to the right ventricle of the heart, by diminiſhing the capacity of the veſſels. When the air is too light theſe veſſels being leſs compreſſed, may be over dilated by the impelled humours, whence will enſue all the effects of a moiſt and hot air; from all which may be produced the cauſes of inflammation.

But beſides the forementioned qualities of the air, the atmoſphere which ſurrounds us contains an infinite variety of bodies. Exhalations from plants and animals, foſſils, &c. are all diffuſed through the air, and fluctuate in it. If theſe exhalations, mixed with the inſpired air, contain particles of a cauſtic, aſtringent, or coagulating nature, it is evident enough that a peripneumony may from thence ariſe. But

toge-

together with the inſpired air, other particles may be drawn into the lungs which may do great miſchief, though they are not acrid, and though their effects are not ſo ſoon pernicious. Thus Diemerbroeck found in the lungs of a ſtonecutter's ſervant who died of an aſthma, a large quantity of ſtone-duſt filling almoſt all the veſicles of the lungs.

Chyle from groſs, dry, &c. aliments.] Crude chyle, as appears from phyſiology, may produce a morbid lentor, and heſitate in the ultimate extremities of the pulmonary artery, or at leaſt render the circulation more difficult through the lungs, as we ſee it does in phthiſical people, who ſuffer the greateſt anguiſh while the new chyle is mixed with the blood.

Violent exertions of the lungs, &c.] For all violent exerciſes increaſe the motion of the heart, and, conſequently, the celerity of the blood through the arteries of the lungs, by which the more fluid parts are diſſipated, and an inflammatory tenacity produced in the blood, that is ſtrongly diſpoſed to concretion.

Coagulating, cauſtic, &c. poiſons.] See Wepfer's experiments in his treatiſe De Cicuta Aquatica.

Voilent perturbations of the mind.] How much violent paſſions may increaſe, diminiſh or diſturb the vital motion of the humours has been already declared at Aph. 104.

A quinſy with an oppreſſion of the breaſt.] Whatever hinders the free ingreſs of the air into the lungs, or the dilatation of the thorax in inſpiration, diſpoſes the blood to heſitate in the ultimate branches of the pulmonary artery; and while theſe cauſes continue to act, the lungs will be filled with impervious blood, and occaſion a peripneumony of the worſt kind. When, therefore, a quinſy ſeizes the aſpera arteria or larynx, the circulation of the blood through the lungs will become difficult, the free paſſage of the air into the lungs being obſtructed by a narrowneſs of theſe parts. But, in a violent pleuriſy, or paraphrenitis,

phrenitis, the patient cannot dilate the thorax on account of the great pain, and thus ſuffocate themſelves.

APH. DCCCXXV.

IF the cauſes, enumerated in the preceding aphoriſm, have produced a peripneumony, it will have various effects according to the nature of the part effected: for an inflammation of the bronchial arteries by compreſſing the contiguous extremities of the pulmonary artery, will, like a contagion, inflame thoſe alſo. See Aph. 822.

As the inflammation may be ſeated in the extremities either of the bronchial or pulmonary arteries, the effects will be various; for the bronchial artery being deſtined to ſupply the lungs with nouriſhment, the injured functions of this artery will properly affect only the lungs themſelves as a private part of the body. But an inflammation of the pulmonary artery not only affects the lungs, but likewiſe the circulation of the blood from the right to the left ventricle of the heart, upon which life depends. See Aph. 823.

APH. DCCCXXVI.

BUT when the extremities of the pulmonary artery are inflamed, the blood ſtagnates; that veſſel is diſtended; the moſt fluid parts of the blood are expreſſed as it were by tranſudation; the groſſer parts are accumulated, and almoſt all the blood, yet capable of circulating, is collected betwixt the right ventricle of the heart and extremities of the pulmonary artery; hence the lungs grow heavy, are unable to expand

pand themſelves, and turn livid; the left ventricle of the heart is deprived of blood; great weakneſs enſues; the pulſe is ſmall, ſoft, and unequal in every reſpect; the reſpiration is ſmall, frequent, difficult, hot, and cannot be performed but in an erect poſture, attended with a ſlight cough; the venal blood ſtagnates about the right auricle and ventricle of the heart; an unuſual redneſs of the face, eyes, mouth, fauces, tongue, and lips; and, at laſt, a ſuffocating death with inexpreſſible anguiſh, and a delirium.

In this aphoriſm are conſidered thoſe effects which neceſſarily follow an inflammation of the pulmonary artery, and from which may be formed the diagnoſis of a peripneumony.

APH. DCCCXXVII.

IF a peripneumony ſeizes both lobes of the lungs, and to a violent degree, inevitable and ſpeedy death will follow; as nature cannot be aſſiſted, in this caſe, by any antiphlogiſtic medicine. Compare Aph. 386, 395 to 402.

APH. DCCCXXVIII.

BUT if a peripneumony ſeizes only a ſmall part of one lobe of the lungs, and the cauſes not very violent, there are ſome hopes, though no certainty, that the patient may be cured.

For an inflammation in a ſmall part of the lungs may be eaſily ſpread to the adjacent parts, and the cure therefore uncertain. APH.

APH. DCCCXXIX.

FROM what has been ſaid at Aph. 824, to Aph. 829, the diagnoſtic and prognoſtic ſigns may be derived; eſpecially if we conſider, that a peripneumony terminates like other inflammations. Hence alſo it has various ſtages, according to the time of its duration, ſo that it may end either in health, another diſeaſe, or prove fatal.

We are now to inquire by what ſigns a peripneumony may be known from other diſeaſes of the breaſt. The cauſes enumerated at Aph. 824, and the effects deſcribed at Aph. 826, remove all doubt in this reſpect. The fever which precedes and accompanies a peripneumony readily diſtinguiſhes it from a convulſive aſthma, with which it has many ſigns in common. But in the progreſs of this diſeaſe, when the blood can hardly be tranſmitted through the lungs, the pulſe is often ſo ſmall and ſoft, that it may eaſily deceive the unſkilful: there is alſo at the ſame time a ſuffocating cough, with a redneſs of the face and and eyes, and the ſymptoms enumerated at Aph. 826.

A peripneumony is not attended with an acute pain; hence Celſus calls it a diſeaſe which has more danger than pain. We know that the internal ſurface of the lungs is extremely ſenſible, as an almoſt ſuffocating cough is excited when any thing ſlips into the trachea; and in catarrhs, from the ſame cauſe, the patient feels troubleſome pain. But when the ſubſtance of the lungs is inflamed, there is rather perceived an oppreſſing weight and anguiſh, than a ſenſe of pain. Are not the lungs conſumed in conſumptive patients by purulent matter, without much pain? But even here ſome difference ariſes from the nature of the part affected; for if an inflammatory tumour

tumour diſtends by its bulk the internal membrane of the lungs, a troubleſome pain may ariſe in that part. When the lungs adhere to the pleura, which is frequently the caſe, the pleura may be ſo ſtretched by the inflamed lungs, as to occaſion an acute pain in the breaſt. A pain may likewiſe enſue when the lungs are diſtended with impervious blood, and preſs upon the mediaſtinum. We may therefore conclude, that an acute pain does not eſſentially belong to a peripneumony, and this opinion is ſupported by what the patients feel, as well as by the teſtimonies of the ancient phyſicians. See Aretæus, lib. ii. cap. 1. and Cæl. Aurelian. Ætius. &c. Hippocrates has left us the following diagnoſtic ſigns, which are well worth our attention: "In a peripneumony, when the whole "tongue is white and rough, both ſides of the "lungs are inflamed; but when only half the tongue "appears thus, one half of the lungs on the ſame "ſide are inflamed. Thoſe who have a pain in the "clavicle, have the upper part of the lungs on one "ſide diſordered; but when both clavicles are pain-"ful, the upper parts of the lungs on both ſides are "affected, &c." Coac. Prænot.

As to the prognoſis, it is evident from what has been ſaid at Aph. 827, and 828, that it is always dangerous, as it is liable to all the events of an inflammation. But we ſhall hereafter, at Aph. 847, treat fully concerning the prognoſis of this diſeaſe.

APH. DCCCXXX.

A Peripneumony is cured, 1. By a mild reſolution, if the habit is lax, the humours ſoft, their viſcidity not great, and the part affected of the bronchial or pulmonary artery not large. 2. By a ſpeedy, free, and copious yellow ſpitting, mixed with a little blood, of a conſiſtence ſufficiently thick, that abates the pain,

pain, eaſes the reſpiration, the pulſe becoming larger and fuller, and the matter expectorated ſoon changing white, and of a mild nature: this chiefly happens when the ſeat of the diſorder is in the bronchial, or pulmonary artery, and not very large. 3. By a bilious flux, which affords relief, and in which a matter almoſt like the ſpitting above deſcribed is evacuated. 4. By a copious diſcharge of thick urine before the ſeventh day, which relieves the patient, and depoſites a ſediment at firſt red, but by degrees turning white. In this caſe the reſpiration becomes eaſy, the fever mild, and of a good kind, the thirſt abates, and heat, moiſture, laxity, and ſoftneſs are equally diffuſed all over the body.

1. See what has been ſaid of reſolution at Aph. 386.

2. By a ſpeedy, free, and copious yellow ſpitting, &c.] The faithful obſervations of the ancient phyſicians ſhew, that nature endeavours to diſcharge the morbific matter in a peripneumony by a copious yellow ſpitting, intermixed with a little blood; for a yellow-coloured ſpit denotes a concoction of the matter; but then the inflammation muſt be ſeated in the bronchial artery, or but in a ſmall part of the pulmonary artery. Galen depends as much upon the ſpitting in this diſeaſe, as upon a ſediment in the urine in acute diſeaſes. But it is not every ſpitting that is ſalutary in this diſeaſe; it ought to be eaſy, and diſcharged by coughing without much trouble, and appear in the very beginning; for if the cough keeps off a few days, there is juſt reaſon to fear that the inflammation will turn to a ſuppuration; but then a peripnumony does not terminate in health, but in another diſeaſe, namely, a vomica of the lungs,

lungs, and all this is confirmed by the obſervations of Hippocrates. Vid. Coac. Prænot.

3. By a bilious flux, &c.] A peripneumony may likewiſe be carried off by a bilious diarrhæa, the matter paſſing through the extremities of the arteries into the veins, and mixing with the circulating humours, may afterwards be expelled by ſtool. But as various humours are diſcharged by the bowels beſides that of the diſeaſe, we cannot always diſtinguiſh whether the matter here evacuated is like the ſpitting deſcribed in the text. But in this caſe the relief of the diſeaſe is the moſt certain ſign; for as Hippocrates obſerves, "If thoſe humours are evacuated, which "ought to be diſcharged, the evacuation relieves, "and is eaſily ſupported; but not ſo if contrary[a];" and this he lays down for a general criterion of ſuch ſpontaneaus evacuations. This flux is ſaid to be bilious, not becauſe an evacuation of bile, properly ſo called, is here neceſſary, but becauſe a matter of a yellow colour is diſcharged by ſtool.

4. That evacuation of the morbific matter which is made by urine is alſo ſalutary. Hippocrates expected the termination of a peripneumony from a copious diſcharge of thick urine only. His words are, "When a peripneumony comes to its height, it is "not curable without an evacuation; and it is of a "malignant nature if the reſpiration is difficult, if "the urine is thin and acrid, with ſweats about the "head and neck. For theſe ſweats are of a bad "kind, and deſtroy the patient, unleſs a copious "diſcharge of thick urine enſues, or a ſpitting of "concocted matter. When either of theſe laſt evacuations comes on ſpontaneouſly, it terminates the "diſeaſe." Aretæus makes the ſame obſervation; but this diſcharge by urine muſt be very copious, and ought to be made before the ſeventh day. The ſediment ſhould alſo be firſt of a reddiſh colour, and

[a] Aph. ii. Sect. 1.

afterwards

afterwards gradually change white; for this denotes a perfect concoction of the morbific matter.

APH. DCCCXXXI.

A Peripneumony terminates in another diſeaſe, depending on the nature of an inflammation, or of the lungs themſelves, according as they are hence hindered from performing their proper action.

As a peripneumony is a true inflammation, it may terminate as other inflammations, namely, in a ſuppuration, gangrene, and ſchirrhus. But beſides theſe, other diſeaſes may follow, inaſmuch as the proper action of the lungs is diſturbed by the inflammation. Hence an incurable aſthma, a fatal phrenſy, leanneſs, and innumerable other diſorders.

We come now to conſider the different ways in which a peripneumony terminates; and at the ſame we ſhall remark the principal ſymptoms which attend the diſorders.

APH. DCCCXXXII.

HENCE a peripneumony may terminate in a ſuppuration, which happens when the inflammatory matter can neither be reſolved by nature, nor corrected by art; yet being mild, (387) ſtagnant, hot, and acted upon, breaks the ſmall veſſels, diſſolves them into pus, and by diſtending or corroding their ſides, forms an abſceſs or vomica within the ſpace of fourteen days.

If the inflammatory matter cannot be reſolved, or diſcharged from the body by the various excretions mentioned

tioned at Aph. 830, or elſe depoſited on ſome other part within the ſpace of fourteen days, an abſceſs of the lungs will be formed; for after this time there is no room to hope for an excretion of the morbific matter by critical evacuations; yet Hippocrates extends this time to the twenty-ſecond day. De Morb. lib. 2.

But as this termination of a peripneumony is always dangerous, it will be neceſſary to lay down thoſe ſigns which ſhew that an abſceſs is now actually forming.

APH. DCCCXXXIII.

THAT an abſceſs is forming in the lungs, is known by the following ſigns: 1. If there appeared at firſt the ſure ſigns of a pretty ſevere peripneumony (825, 828,) yet not the moſt violent. 2. If a reſolution and its ſigns (830) do not appear ſoon enough, that is, before the fourth day. 3. If the ſymptoms enumerated at Aph. 825, 826, are not removed, either by a concocted ſpitting evacuated in due order on critical days, that is, the 3, 5, 7, 9, 11, or 14 day, and that changing ſucceſſively in colour and conſiſtence ſo as to indicate a cure, or if they are not removed by bleeding, medicines, or diet. 4. If on the contrary, the ſymptoms, not of the moſt violent kind, continue obſtinate, with a continual delirium, and a ſoft, undulating, or wave-like pulſe.

APH. DCCCXXXIV.

THAT a ſuppuration is really forming, we know by the following ſigns: 1. If the ſymptoms above-mentioned are preſent. 2. If there are ſlight and frequent ſhiverings, without any evident cauſe; if the pain remits; the difficulty of breathing continues; the cheeks and lips look red; the patient thirſty; if there is a fever, eſpecially towards the evening, and the pulſe ſoft and weak.

2. The firſt ſign of a ſuppuration is a ſlight ſhivering, ſoon going off, and frequently returning, without any manifeſt cauſe, ſuch as the admiſſion of cold air, drinking of cold liquor, &c. It would be difficult for us to aſſign the cauſe of this ſhivering; but it is ſufficient that we know this from practical obſervations.

Another ſign of a ſuppuration begun, is a remiſſion of the pain. We have already demonſtrated that pain ariſes from a diſtention of the ſmall inflamed veſſels, whoſe leaſt fibres are near upon breaking; but by a ſuppuration the extremities of the ſmall obſtructed veſſels are diſſolved, and then the pain muſt of neceſſity be diminiſhed; yet this ſign may deceive, as we have already ſhewn that a peripneumony is not always attended with ſevere pain.

But it is evident that the difficulty of breathing muſt continue, becauſe the tumour impeding the free expanſion of the lungs in reſpiration ſtill remains; and that even the breathing will be more difficult about the time of ſuppuration. From the ſame cauſe the free return of the venal blood from the heart being obſtructed, the cheeks and lips will look read. The patient is likewiſe thirſty, becauſe the body dried up, the more fluid parts of the blood being

being diſſipated by the ſlow fever which conſtantly affects the patient, and with which every ſuppuration is attended. The fever is generally increaſed towards the evening, when the crude chyle is circulated with the blood, and not ſo ſoon aſſimilated, the action of the lungs being weakened by the diſeaſe. See Aph. 586. N°. 1. But as the motion of the blood through the lungs is at the ſame time obſtructed, the reaſon is evident why the pulſe is weak and ſoft.

APH. DCCCXXXV.

THAT a ſuppuration is already formed, we may conclude; 1. From the ſigns mentioned at Aph. 833, 834. 2. From an obſtinate and dry cough, increaſing after meals, or upon motion; from a difficult, ſhort, laborious, and wheezing reſpiration, increaſed after eating or exerciſe; from the patient being able to lie only in one poſture, that is, on the affected ſide; for a continual, periodical ſlow fever, increaſing after eating, drinking, or motion, with a redneſs of the cheeks and lips; from a loſs of appetite; great thirſt; from night ſweats, chiefly about the throat and forehead; frothy urine; paleneſs; a waſting, and extreme weakneſs.

2. Now a vomica or abſceſs in the lungs is formed, which by compreſſing the adjacent ſoft parts, and by irritating the pulmonary veſicles, will occaſion an obſtinate dry cough; for nothing can be brought up from the affected part, ſo long as the abſceſs remains unbroken. Some of the mucus, indeed, which lubricates the internal ſurface of the lungs, may be brought up, yet it is nevertheleſs very juſtly called

a dry cough, as the ſpitting is very ſmall, and brought up with great difficulty. But this cough is more eſpecially increaſed, when the continual ſlow fever is periodically augmented. Hence we ſee the reaſon of the following prognoſtic of Hippocrates: "Thoſe "who ſweat a little, and have a cough about the "time that their fever has fits of increaſe, are in a "bad condition."

The reſpiration muſt alſo be difficult, ſhort, laborious, and wheezing, ſo long as the vomica ſtreightens the air-veſſels of the lungs, and prevents their dilatation by the inſpired air. There is alſo at the ſame time a diſagreeable rattling or wheezing in the breaſt, ariſing from a colliſion of the air againſt the mucus here collected, or from a dryneſs of the veſicles of the lungs rattling like parchment, when they are expanded by inſpiration.

The abſceſs is almoſt conſtantly ſeated in but one ſide only of the lungs. If it is large, when the patient lies on his ſound ſide, the mediaſtinum will be preſſed towards the other ſide of the thorax, whence the ſpace will be diminiſhed wherein the ſound part of the lungs it ſeated; and ſince the reſpiration is already impeded in the affected ſide, the patient is unable to bear the oppreſſion, and therefore is obliged to change his poſture, till he meets with one more eaſy, which is always on the affected ſide. But ſometimes the inflamed lungs adhere to the pleura, which may prevent the weight of the abſceſs from preſſing too much upon the mediaſtinum, when the patient lies on the ſound ſide. But then he will perceive an uneaſy tenſion, and often a ſharp pain from a diſtraction of the cohering parts, which will likewiſe oblige him to lie on the affected ſide.

Night ſweats almoſt conſtantly attend an abſceſs of the lungs, and likewiſe thoſe who have a phthyſis with a purulent expectoration. For the action of the lungs, among other uſes, is intimately to unite all the humours together, and to give the blood a due

due degree of denſity, as well as to perfect the chyle. But when the lungs are weakened by an abſceſs, the texture of the blood will be leſs firm; therefore the thinneſt parts of it will be expreſſed in the form of ſweat, from the increaſed motion of the humours by the continual ſlow fever. And theſe ſweats will be ſtill more increaſed by an abſorption of the matter confined in the lungs, and diſpoſe the blood more readily to a putrid diſſolution. But the ſweat will appear chiefly about the throat and forehead, the abſceſs hindering the free paſſage of the blood through the pulmonary artery, will at the ſame time prevent the return of the venal blood from the head, whence the veſſels there will be diſtended, and conſequently, *cæteris paribus*, the ſweat will be here more conſpicuous, and collected into drops, which is always of bad preſage.

The urine is in this ſtate always frothy, and upon ſhaking it, the froth often continues upon the ſurface for ſeveral hours. Healthy urine ſoon loſes this froth, and therefore this frothy urine is bad, becauſe it deviates in its qualities from healthy urine. But as there is an imperfect aſſimilation of the humours in this diſeaſe, it is no wonder that the urine thus degenerates into an unactive, viſcid, and ſoapy lixivium. This ſort of urine is obſerved in other diſeaſes of the lungs, as when they are ſtuffed with a viſcid phlegm, and therefore is not always a ſure ſign of a vomica in the lungs, unleſs it be attended with the ſigns before-mentioned. Hippocrates has beautifully collected together all the ſigns of an abſceſs of the lungs in his Prognoſtics, and the Coacæ Prænotiones.

APH. DCCCXXXVI.

THIS abſceſs once formed, has various terminations. 1. It ſuffocates the patient when it occupies the whole compaſs of the lungs, or when it compreſſes and ſtops up thoſe veſſels which as yet remain pervious. 2. It may ſuffocate of a ſudden, the matter diſcharging itſelf at once into the aſpera arteria. 3. It is often ſolved by a purulent ſpitting relieving, but waſting the patient, at the ſame time. 4. It terminates by the pus falling into the cavity of the thorax, or into the dilated vacuities of the mediaſtinum. And 5. From whence enſue various kinds of conſumptions, or an empyema, which commonly prove fatal.

1. From what has been ſaid, it is evident that an abſceſs of the lungs, both while it is forming, and already formed, muſt occaſion a dyſpnæa, by hindering the expanſion of the lungs in reſpiration. If therefore the abſceſs does not break, nor the confined matter be abſorpt, nor tranſlated to ſome other part, ſo as to relieve the lungs, it is apparent that the tumour muſt increaſe daily, till at length it ſuffocates the patient. The celebrated Boerhaave ſaw a caſe of this kind. The lungs on one ſide were converted into a ſack full of matter, of ſuch prodigious bulk, as to diſplace not only the heart, but likewiſe thruſt down the diaphragma into the abdomen.

2. If a large abſceſs vents itſelf at once into the aſpera arteria, there will be no paſſage for the air to be inſpired, whence ſudden death enſues. Aretæus has remarked this event of a peripneumony, lib. ii. cap. 1.

3. But

3. But when a ripe pulmonary abſceſs breaks, and the matter eſcapes into the aſpera arteria in a ſmall quantity at a time, the matter being either little in quantity, or the opening in the purulent ſack ſmall, in that caſe the diſeaſe terminates in a purulent ſpitting, and the event will be doubtful or dangerous. Hippocrates has collected together all the good and bad ſigns which attend an abſceſs of the lungs, when it terminates in a purulent ſpitting. "Thoſe chiefly "recover whom the fever leaves the day after the "abſceſs is broke; whoſe appetite ſoon returns, and "who are free from thirſt; who have ſmall and hard "ſtools, the matter white, ſmooth, and uniformly "of the ſame colour, free from phlegm, and brought "up without pain, or violent coughing.—But thoſe "die who are not freed from the fever on the ſame "day, but, when it ſeems to be gone off, returns "again with freſh heat; and thoſe who are thirſty, "have no appetite; who have looſe ſtools, and who "ſpit up a greeniſh or leaden-coloured matter, or "elſe phlegmatic or frothy. A concurrence of all "theſe ſigns denote the patient paſt recovery; but "thoſe who have only ſome of theſe ſigns, ſome of "them die, and others recover, after ſuſtaining the "diſeaſe a long time."

4. Here we have another way in which a ſuppurated peripneumony terminates, namely, when the abſceſs diſcharges its matter, not into the trachæa, but into the cavity of the thorax; and this commonly with a fatal event, as there is here no paſſage for the matter to eſcape but by performing the paracenteſis of the thorax. But as the inflamed lungs often adhere to the contiguous parts, the abſceſs may pour out its matter into the cavity of the pericardium, or into the dilated cavity of the mediaſtinum. We know that a peripneumony terminates in this manner, when after all the ſigns of a formed abſceſs, there is no matter evacuated by ſpitting, or otherways, nor any tranſlation of it upon another part, and yet the pa-

tient perceives ſudden eaſe, the matter paſſing from a narrower into a larger place, as Hippocrates obſerves, De Morb. lib. iii. See more of this when we come to treat of an empyema.

The matter of an abſceſs of the lungs makes to itſelf ſometimes wonderful paſſages, as we learn from practical obſervations. The Medical Eſſays relate ſome caſes of this kind, where the matter had corroded the diaphragma and liver [a], and formed a purulent ſinus in that viſcus of three inches diameter.

5. As matter collected in the lungs may by a tranſlation, or an eroſion, be transferred to other viſcera, the reaſon is evident why ſevaral ſorts of phthiſes may be expected from a ſuppurated peripneumony.

APH. DCCCXXXVII.

A Peripneumony terminates in another diſeaſe, when the inflammatory matter becomes purulent (ſee Aph. 832, to 834,) and is abſorbed by the ſmall pulmonary veins, mixed with the blood, and then depoſited upon ſome other part, by which the lungs are relieved, but ſome other part oppreſſed, which, if it be leſs neceſſary to life, the μετάϛασις, or tranſlation is ſaid to be ſalutary; but if it ſettles upon the liver, ſpleen, brain, or other important viſcera, the event is generally fatal. Hence peripneumonic abſceſſes behind the ears, upon the legs, and in the hypochondria.

But this tranſlation does not take place but when the inflammatory matter becomes purulent, and is not evacuated either by ſpitting, a diarrhæa, or by urine; nor yet collected in the lungs, ſo as to form a vomica. It can only happen when the inflammatory matter is concocted and rendered moveable, ſo as

as to paſs from the obſtructed arteries into the veins, after having acquired the nature of pus, the veſſels at the ſame time remaining intire. By this kind of metaſtaſis the lungs may be freed, and when once freed from the diſorder, may recover their former healthy ſtate. But it is here to be obſerved, that the good or bad event of this metaſtaſis depends upon the nature of the part upon which the morbid matter ſettles; for if it ſettles in the liver, ſpleen, brain, &c. the worſt conſequences may be feared. In the brain it uſually occaſions ſudden death; in the other viſcera, purulent abſceſſes, which are hardly, if at all curable, unleſs the matter depoſited in theſe parts can be ſpeedily expelled. But theſe peripnemonic abſceſſes are chiefly about the ears, legs, and hypochondria, of each of which we ſhall treat ſeparately.

APH. DCCCXXXVIII.

THAT ſuch abſceſſes will happen, may be known, 1. By the ſigns of a peripneumony not of the worſt kind (Aph. 833, 834,) with a fever, neither violent nor malignant, yet continual; with a pain of the breaſt, anxiety, oppreſſion, and difficulty of breathing; but theſe not in the worſt degree, and without the ſigns of reſolution (Aph. 830.) 2. If the pulſe, together with theſe ſigns, be conſtantly and in all reſpects wavering or fluttering. 3. By pain, redneſs, heat, and tenſion in the ears, legs, and hypochondria.

To foreſee future abſceſſes, requires a careful attention, leſt art, unſeaſonably uſed, ſhould diſturb the metaſtaſis now forming by nature, or neglect the application of ſuch means as ſolicit the matter towards thoſe parts to which it tends.

1. In

1. In the ſlighteſt peripneumonies a reſolution may be expected, or at leaſt a metaſtaſis of the matter to other parts; but it can hardly be hoped that thoſe of the worſt kind can terminate in health. This is only to be expected, when it is neither very mild, nor moſt violent, but of an intermediate degree between thoſe extremes. In this ſtate there is a fever, but not very violent, nor attended with malignant ſymptoms, becauſe the matter of the diſeaſe is not yet ſubdued; and as there are no ſigns of a reſolution, nor any appearances in the ſpittle, ſtools, or urine, which uſually ſhew that the morbific matter is diſpoſed for a diſcharge by theſe paſſages, there is then the greateſt reaſon to expect a tranſlation upon other parts. All theſe ſigns are accurately collected by Hippocrates, in his book of prognoſtics.

2. For a fluttering pulſe ſhews here that the morbid matter now circulates with the blood through the veſſels, and that an abſceſs is to be expected, if the matter is not quickly evacuated. It is here to be remarked, that the other good ſigns concur with ſuch a pulſe; for a pulſe continually wavering, and attended with bad ſigns, rather denotes death. See what has been ſaid on critical commotions at Aph. 587, and 594.

3. For pain, redneſs, &c. ſhew that the matter of the diſeaſe being diſſolved and moved with the blood through the veſſels, is now depoſited on the parts which are painful, red, &c. Hence Hippocrates remarks, "That thoſe who, recovering from a "diſeaſe, have pain in any part, will there have "abſceſſes." Aph. 32. Sect. 4.

APH.

APH. DCCCXXXIX.

THAT theſe abſceſſes will be formed about the legs, we know, 1. From the ſigns of future abſceſſes enumerated in the preceding aphoriſm. 2. From the ſigns of a ſlight inflammation about the hypochondria, together with thoſe of future abſceſſes.

Hippocrates obſerves, "That abſceſſes formed "about the legs, even in violent and dangerous "peripneumonies, are indeed always of ſervice." Prognoſt.

1. Of theſe we treated at Aph. 838.

2. There are two ways which this matter inclines to take, namely, either to the upper or lower parts of the body. When it is moved with the blood through the branches of the deſcending aorta, a great part of it will be conveyed, both by the cæliac and meſenteric artery, through the chylopoietic viſcera, and from thence paſſing into the vena portarum, it muſt make its way through the narrow veſſels of the liver; in which organ we know the paſſage of the humours is always more difficult, as the venal blood muſt paſs thro' the narrow extremities of converging veſſels, without being aſſiſted by the impelling force of the heart. It will therefore not appear wonderful, if an obſtruction ariſes in theſe parts, with the ſigns of a ſlight inflammation. Whether this be the genuine cauſe of the ſymptoms, or whether it ariſes from ſome other leſs known, it is ſufficient for the phyſician that it preſages a future abſceſs in the legs. But there ought to be only a ſlight inflammation, and ſoon diſappearing again; for if the inflammation is great, there would be reaſon to fear that the morbific matter would lodge itſelf in the liver, with more dangerous events.

APH.

APH. DCCCXL.

BUT we know that abſceſſes will be formed about the ears. 1. If the ſigns enumerated at Aph. 838 are preſent. 2. If, at the ſame time, the hypochondria are ſoft.

It was proved at Aph. 416, that abſceſſes formed about the ears, either in health or diſeaſe, are called *parotides*. Hippocrates obſerves, that abſceſſes will be formed towards the upper parts of the body, "If "the hypochondria are ſoft, and free from pain; if "the difficulty of breathing, which has continued "for ſome time, ceaſes without any manifeſt cauſe." For theſe ſigns denote that the matter of the diſeaſe has changed its place, and will be depoſited about the parotid glands, according to the uſual courſe of nature in curing diſeaſes by a metaſtaſis. It is indeed true, that parotids are ſometimes formed when the hypochondria are affected at the ſame time, but they are then always dangerous. For, as Hippocrates obſerves, "ſwellings about the ears in thoſe who "have pain or anguiſh about the hypochondria, pre-"ſage death."

APH. DCCCXLI.

WE know that the matter is conveyed to the liver. 1. If there are the ſigns of Aph. 838. 2. If a pain continues in the liver, with an urine like that in the jaundice, and a yellow colour in the ſkin; hence alſo follows a vomica of the liver, a moſt dreadful diſorder.

The pain felt in the liver does not ſoon go off (like the pain from abſceſſes in the legs) but continues. The other ſigns of a future abſceſs are taken from the injury of the functions peculiar to this viſ-

cus

cus, namely, the ſecretion and excretion of the bile. But if the matter tranſlated to the liver does not find a paſſage through the excretory ducts of the vena portarum, and thence into the cavity of the inteſtines to be expelled by ſtool; or return through the branches of the cava, and be depoſited upon ſome leſs dangerous part, it will produce a vomica of the liver, from which the patient very ſeldom recovers. But the matter may be tranſlated to other viſcera as well as to the liver, which we may eaſily know from the injured functions of the part.

APH. DCCCXLII.

IF theſe abſceſſes about the ears and legs relieve the lungs,—if they remove the fever and ſuppurate, diſcharge their contents, or continue fiſtulous,—if they appear before the ninth day, they are then always ſalutary; but if they ariſe after the ſpitting becomes purulent, nor yet very yellow, without affording relief to the ſymptoms above mentioned, they are bad; but if they vaniſh after they have once appeared, and in the firſt ſtage of the diſeaſe, the peripneumony returning, they are then abſolutely fatal.

It appears from what was ſaid at Aph. 587, of criſes, critical evacuations, and abſceſſes, that ſometimes nature endeavours to effect theſe in diſeaſes, but is not always able to accompliſh them, either from the weakneſs of the patient, the malignity of the diſeaſe, or ſome error in him who undertakes the cure. It is therefore neceſſary to know thoſe ſigns which denote whether abſceſſes are ſalutary or not.

For the morbific matter which before was ſeated in the lungs, and occaſioned the peripneumony, ought now to be collected in theſe abſceſſes, and, conſequently, the lungs immediately relieved, which is

is known from a free and eaſy reſpiration, and a larger and fuller pulſe. The fever ought likewiſe to ceaſe, or conſiderably abate, the material cauſe which produced the fever being concocted and removed from the part it firſt affected, and depoſited upon leſs dangerous parts. But that the blood may be freed from all the morbific matter, theſe abſceſſes ſhould continue open for ſome time, although they uſually turn fiſtulous from the quantity of new matter continually brought thither, which prevents the abſceſs from healing. Hence Hippocrates obſerves in his Prognoſtics, " that thoſe who have abſceſſes about the " ears in peripneumonies, and ſuppurations in the " lower parts which turn fiſtulous, recover from the " diſeaſe."

It is moreover requiſite that theſe abſceſſes be formed ſoon enough, and before the ninth day: for if they appear later, there is reaſon to fear that a vomica is by this time formed in the lungs, and that the matter of it being abſorbed, is depoſited on other parts, and there produce abſceſſes, which are always very dangerous, the ulceration in the lungs ſtill remaining.

On the other hand, abſceſſes are bad or uſeleſs that do not relieve the patient; and thoſe are likewiſe to be ſuſpected which ariſe when the ſpitting once becomes purulent, or when it is no longer yellow. But when theſe abſceſſes are once formed, and diſappear again, the greateſt danger attends; for then the morbific matter remains in the body, and flowing towards the internal parts, acquires its former ſeat, and produces a peripneumony almoſt conſtantly fatal, or falling upon the other viſcera, makes a very dangerous metaſtaſis.

APH. DCCCXLIII.

A Peripneumony again terminates in a callous or ſcirrhous tumour of the lungs, if the matter is ſluggiſh and thick, with the circum-

and

ſtances mentioned at Aph. 392; hence the patient is all his life time troubled with a cough, and breaths with difficulty, but in an erect poſture, which is increaſed after eating or motion, and this without the ſigns of a latent vomica deſcribed at Aph. 835; hence alſo an adheſion of the lungs to the pleura.

If the inflammatory matter is not carried off by any of the ways already mentioned, nor yet depoſited by a metaſtaſis upon other parts of the body, but remains impacted in the veſſels, and growing to their ſides, then a callous or ſcirrhous tumour is formed. It is true, ſcirrhi generally ariſe in glandular parts, yet ſcirrhous remains are ſometimes found in other parts after an inflammation improperly treated. See Schenckius, lib. 2. pag. 229.

When a conſiderable part of the lungs is hardened into a ſcirrhus, it is evident that ſuch a part cannot be expanded by the inſpired air; and, therefore, the reſpiration will be difficult, and can only be performed by the neck almoſt upright; and while the patient endeavours to expand the lungs, theſe indurated parts rubbing againſt thoſe which are adjacent, generally excite a troubleſome and dry cough, which is ſtill more increaſed after eating or motion. A vomica in the lungs will equally affect the reſpiration; but a vomica daily increaſes in bulk till it breaks, whereas a ſcirrhous hardneſs continues a long time in the ſame ſtate; by which it is diſtinguiſhed from a vomica.

It is certain, that adheſions of the lungs to the pleura often happen from a peripneumony or pleuriſy; for that ſubtile vapour which exhales from the ſmall arteries opening in the ſurface of the lungs and pleura, prevents theſe parts from growing together when they come in contact with each other; but when part of the lungs or pleura is inflamed, it is rendered dry and imperſpirable, whence an adheſion eaſily follows.

APH DCCCXLIV.

LASTLY, if the bronchia, or pulmonary artery, is ſeized with a very violent inflammation, either from an internal or external cauſe, a gangrene ſoon ariſes, and from thence ſpeedily follows a ſphacelus, from the quantity and motion of the blood, and from the inceſſant action of this very tender viſcus. That this will happen we learn, 1. From a moſt violent peripneumony that will yield to no *critical evacuation*, or *depoſition*, nor to the uſe of proper remedies. 2. From extreme weakneſs, chiefly diſcovering itſelf in the pulſe. From a coldneſs of the extremities. But we know that a ſphacelus is already formed, if, after the foregoing ſigns, the ſpitting becomes ichorous, thin, aſh-coloured, livid, black, and fetid.

When the lungs are violently inflamed, all thoſe cauſes concur which are able to produce a ſudden mortification of the part, ſuch as violent heat, motion, &c. See Aph. 388 and 432.

APH. DCCCXLV.

ALL theſe various ways in which a peripneumony terminates (ſee Aph. 830 to 837, 843 and 844,) are demonſtrable from hiſtories of the diſeaſe, and from anatomical diſſections.

See the Sepulchretum Anatom. of Bonetus, and the writers of obſervations.

APH

APH. DCCCXLVI.

FROM all which it is evident, that the diſorder which the ancients have deſcribed under the title of a peripneumony, is a true inflammation of the lungs.

This aphoriſm is only a corollary or deduction, confirming the truth of what was only ſuppoſed in the definition of a peripneumony. See Aph. 820.

APH. DCCCXLVII.

FROM which likewiſe the prognoſis will be clear which aſſerts, that a peripneumony is always very dangerous, from the function of the lungs being abſolutely neceſſary to life, and to ſubdue the inflammatory matter; from the quantity and impetus of the blood continually conveyed to the lungs; from their perpetual motion; from their ſituation, which will not admit the application of remedies; from the extreme tenderneſs of the veſſels, which are eaſily deſtroyed; and from the impoſſibility of making revulſion, ſo neceſſary in the cure of an inflammation.

APH. DCCCXLVIII.

FROM all which (847,) it is apparent when, for what reaſons, and with what ſymptoms, a peripneumony terminates in death; namely, if the whole lungs, together with the heart, are inflamed, and the heart falls to one ſide, if the patient is ſeized with a paraplegia, is cold and

ſenſeleſs, he dies on the ſecond or third day. If the urine is good and concocted in the beginning of the diſeaſe, and turns thin after the fourth day; if the patient is obliged to ſit upright in the height of the diſeaſe;—if he diſcharges purulent matter by ſtools;—if the peripneumony is a dry one, with a rattling in the throat; if it is very violent, the body dry, hard, callous, and inured to labour; if it is of a bad kind with a ſtillicidium of very red blood from the noſe; if it is dry with red ſpots upon the breaſt; if a coryza, or violent ſneezing, preceeds or follows the diſeaſe; if it ariſes from an ardent fever; if a bilious ſpitting, mixt with pus, begins to appear immediately after the ſixth day; if the ſpitting is from the beginning very bloody, yellow and unmixed, or white and round, or very frothy, not relieving the pain; if it is brown, filthy, like the lees of oil, black, bluiſh, greeniſh, and unequal, or grumous; if ſuch ſpitting neither relieves the fever, nor difficulty of breathing, the patient expires on the ſeventh or ninth day. But when death is coming upon them, the pulſe fails, the extremities grow cold, and the breaſt only, with the head and neck are very hot, while the cheeks look red, and then livid.

When the whole lungs, &c.] This prognoſtic is taken from Hippocrates. It is, indeed, wonderful that Hippocrates ſhould be able to remark this, unleſs he learnt it from the common laws of the circulation, or from the diſſection of bodies deſtroyed by peripneumonies.

If the urine is good, &c.] This is alſo taken from Hippocrates, and denotes, that a diſcharge of the mor-

morbific matter was began, but now ſuppreſſed, and muſt therefore be dangerous, as the lungs are not relieved thereby.

If in the height of the diſeaſe, &c.] See what has been ſaid of an erect reſpiration at Aph. 826. This always denotes a difficult circulation through the lungs in the height of diſeaſes; but, towards the decline, it is not a bad ſign.

If he diſcharges purulent matter by ſtools.] A copious diſcharge of purulent matter by ſtools ſuppoſes a large ſuppuration in the lungs. This prognoſtic is likewiſe taken from the Coacæ Prænotiones of Hippocrates, and is commonly fatal, if not abſolutely ſo.

If the peripneumony is a dry one, with, &c.] This rattling in the throat ſhews, that the blood-veſſels of the lungs are ſo full and diſtended as to compreſs the air-veſicles, whereby the free entrance and return of the air is obſtructed; and that the mucus thickening, in the manner we ſhall preſently explain, is agitated by the air, and cannot be brought up from the parts to which it adheres on account of the difficult reſpiration, but excites this diſagreeable noiſe. The like kind of noiſe is ſometimes perceived when the morbific matter is diſcharged by ſpitting, but it immediately ceaſes when the matter, lodged in the trachæa, is expelled.

If it is very violent, the body dry, &c.] In robuſt conſtitutions, hardened by labour, a peripneumony is almoſt conſtantly fatal; for here the inflammation is greater, and the veſſels more rigid.

If it is of a bad kind, with a ſtillicidium, &c.] This prognoſtic is given us by Hippocrates in his Coacæ Prænotiones. We have already obſerved, that a peripneumony ſeldom goes off by a bleeding at the noſe, and that it is only a copious hæmorrhage that can be of uſe in acute caſes, unleſs it happens on an indicating day, and is followed by a large critical evacuation on the next. Hence it is eſteemed a

fatal ſign, eſpecially if the blood is of a very deep red; for it then ſhews a great diſtention of the veſſels of the head, that they now begin to break, and that the blood is too thick to be diſcharged.

If it is dry, with red ſpots, &c.] This is alſo taken from the Coacæ Prænotiones, and denotes, that the cutaneous veſſels are ſtuffed up, or, that being burſt, they have extravaſated their blood. Soon after theſe ſpots turn livid, which ſhews that a gangrene is begun. In moſt diſeaſes it is obſervable, that when the internal parts are affected, there is always ſome alteration in the ſkin. Thus, in violent inflammations of the bowels tending to a gangrene, ſuch red ſpots often appear in the ſkin of the abdomen, and ſoon turn livid.

If a coryza, or violent ſneezing, &c.] We have already explained what a coryza is in the comment to Aph. 69. N°. 5; and we have ſaid ſomething on this ſubject in the comments to Aph. 787 and 793. If now we conſider, that by coughing and ſneezing the inflamed lungs are violently agitated, and the impetus of the humours increaſed, it is to be feared that a rupture of theſe tender veſſels may enſue, and the inflammation terminate in a fatal gangrene.

If it ariſes from an ardent fever.] For in this fever the blood is deprived of its more fluid parts, and there is an inflammation almoſt throughout the body. If, therefore, the blood begins to heſitate in the narrow extremities of the pulmonary artery, either a ſpeedy ſuffocation and death muſt enſue, or the diſeaſe terminate in a fatal gangrene.

We come next to thoſe preſages which are taken from the conditions of the ſpittings.

If a bilious ſpitting mixt with, &c.] This is an obſervation made by Hippocrates, no leſs true than wonderful. He depended ſo much upon a bilious ſpitting, mixed with a ſmall quantity of blood, that from thence he expected an intire cure of a peripneumony. On the contrary, he condemns a bilious

bilious ſpitting, mixed with pus, after the ſixth day. For ſuch a ſpitting ſhews, that the inflammation is now changed into a ſuppuration. But ſee Aph. 833.

If the ſpitting from the beginning is very bloody.] A little blood, mixed with a concocted ſpit, is one of the beſt ſigns; but if it is very bloody in the beginning, there is great reaſon to fear a rupture of the very ſmall and tender veſſels of the lungs.

Yellow and unmixed.] This ſpit is alſo condemned by Hippocrates, and likewiſe by Aretæus. But it ought to be carefully diſtinguiſhed from that yellow ſpit which has ſmall bloody ſtreaks, and appears thick and concocted like pus or matter. For the unmixed, yellow ſpit is only the mucus collected in the veſiculæ of the lungs, of a thinner conſiſtence, and tinged with a yellow colour. This kind of ſpit denotes, that the groſſer parts of the humours are accumulated in the lungs, while the thinner parts only can paſs through them; hence appears the reaſon why it is a fatal ſign.

Or white and round.] This is the mucus of the lungs collected in the bronchia, and thickened by warmth and ſtagnation. As the morbific matter cannot be diſcharged from the lungs by ſuch a ſpitting, it is therefore reckoned by Hippocrates among the bad ſigns, though it does not of itſelf denote any malignity. Hence Hippocrates obſerves, "That "the yellow, unmixed ſpit is dangerous, but a white, "viſcid, and round ſpit, is of no ſervice."

Or very frothy.] A ſpitting is ſaid to be frothy when it a long time retains the air with which it is agitated in the lungs. But a mucous ſpitting is commonly frothy, and therefore is not abſolutely a fatal ſign. That ſpitting is only condemned which is frothy to a great degree; for it denotes that the humours to be urged with a great force through the ſcarcely pervious veſſels of the lungs, and the more thick and viſcid juices are expreſſed through the veſſels which ſeparate the mucus, as it evidently ap-

pears in dying people. This is confirmed by an experiment made by the celebrated Dr. Hales in his Hæmaſtatics, Exp. 11. pag. 75. From all which it is evident why a frothy ſpit is a bad preſage in a peripneumony.

Not relieving the pain.] See Aph. 830. N°. 2.

If it is brown, filthy, &c.] All theſe kinds of ſpittings almoſt conſtantly denote a gangrenous corruption already formed in the lungs, and is, therefore, one of the worſt ſigns, more eſpecially the black. But ſee Aph. 432, where we treated of a gangrene of the viſcera.

If ſuch ſpitting neither relieves the fever, nor, &c.] We have already obſerved, in the preſent aphoriſm, that people die of a peripneumony much ſooner when the whole lungs are inflamed; but when the diſeaſe is violent, yet very dangerous, the patient commonly holds out longer. In this caſe, the phyſician is to obſerve whether any ſigns appear denoting that the matter of the diſeaſe is diſſolved, moved, and diſpoſed for a ſalutary diſcharge, or a metaſtaſis to a leſs important part. If nothing of this appears, nor the fever and difficulty of breathing abate, but if all the ſymptoms increaſe, we may foreſee that the peripneumony will prove fatal, which commonly happens on ſome remarkable critical day, namely, the ſeventh, or ninth next following. See Aph. 741. Hippocrates obſerves, that if the fever does not go off on the ſeventh day, there is danger of death on that or the ninth day.

But when death is coming upon them, &c.] As long as any of the blood can circulate through the obſtructed arteries of the lungs, life continues, though weak, and the pulſe as yet moves. But when only a ſmall quantity can paſs through the lungs to the left ventricle of the heart, heat, cannot with the blood, be ſent to the extreme parts of the body, whence they become cold. At length, the blood ſtagnating in the ſuperior veins towards death, the cheeks

cheeks grow livid, and the face itſelf, though turgid and red, now begins to turn cold, which is one of the worſt ſigns.

APH. DCCCXLXIX.

THE cure of a peripneumony is to be varied according to the different ſtages and ſymptoms of the diſeaſe, inſomuch that what is beneficial at time one of the diſorder, may be hurtful at another.

This is evident, as a peripneumony terminates ſo many different ways. We are, therefore, to conſider all theſe particular ways ſeparately; for unleſs this method be taken, every thing will be accidental and uncertain.

APH. DCCCL.

IF, therefore, the habit is lax, the humours mild, the viſcidity not great, and the part of the bronchial, or pulmonary artery, affected, but ſmall, it is cured by reſt of body, and quiet of mind; by a warm, moiſt air; by vaporous baths of freſh water applied to the lungs, noſtrils, mouth, feet, and legs; by thin diet, and light drinks; and by watery, nitrous, mealy medicines, ſweetened with honey. See Aph. 830, N°. 1.

In the Materia Medica of our author, there is a formula which anſwers all theſe indications, and is as follows.

℞. Aq. hord. ℥xl. nitri ʒij. oxymel. ſimpl. ℥iv. M. bibat ℥ij calidas omni quadrante horæ.

APH. DCCCLI.

BUT if there is a ſpeedy, free, and copious yellow ſpitting, mixed with a little blood, and pretty thick, abating the pain, and eaſing the reſpiration, with a larger and fuller pulſe, the medicines directed in the above aphoriſm are to be uſed with emollient and cleanſing remedies; and ſuch as promote expectoration, recruit the vital powers, and the ſteams of warm water directed as above. In this ſtate, bleeding, purging, and ſweating, and all other remedies that may diſturb the ſpitting muſt be carefully avoided. See Aph. 830, N°. 2.

All the ſame remedies, directed in the preceding aphoriſm, are here ſtill required; for by theſe the morbific matter is reſolved, and rendered moveable, and the paſſages opened by which it ought to be evacuated. Hence emollient and detergent decoctions are here neceſſary. The following is given by our author in his *Materia Medica*.

℞. Fol. Paractar. Agrimon. Taraxac. āā Mj. Sem. Papav. alb. contuſ. Fænicul. āā ℥j. Glycyrrh. ℥jß. coq. ex Aq. ℥L. dein cola, Sum'. ℥ij. calidas omni quadrante horæ.

APH. DCCCLII.

IF a peripneumony is attended with a bilious diarrhæa, relieving the patient, and evacuating a matter like the ſpit before deſcribed, then mild, emollient glyſters are to be injected, fomentations of the like kind to be applied to the

the abdomen; emollient decoctions, made gently opening, will likewiſe be ſerviceable, obſerving, at the ſame time, the directions given in the two preceding aphoriſms. See Aph. 830, N°. 3.

Such remedies as lubricate the paſſages towards which nature endeavours to carry off the morbific matter are here proper; with ſuch as relax the veſſels through which it ought to paſs. Hence glyſters of milk and honey, or barley water with ſyrup of marſhmallows, will be uſeful to waſh out the groſs fæces lodged in the large inteſtines. Emollient fomentations ſhould be applied warm to the abdomen. Decoctions of the like ingredients, with the addition of honey, which, by a gentle ſtimulus, both looſens and lubricates the bowels, may be given internally.

APH. DCCCLIII.

BUT if the diſeaſe inclines to go off by a copious diſcharge of thick urine, depoſiting a ſediment that relieves the patient, the ſediment being at firſt red, and by degrees turning white, and made before the ſeventh day, the ſame methods are to be uſed. But to theſe may be added pediluvia, emollient glyſters to foment the kidnies internally, and liniments externally: at the ſame time, the patient ſhould drink plentifully of ſome abſterſive, diuretic apozem.

A preſcription of this kind is given in the *Materia Medica* of our author, which is as follows:

℞. Rad.

℞. Rad. Gramin. Ruſci. Petroſelini. Fæniculi. āā ℥ij. Imperator. ʒij. Sem. Bardan. Petroſelin. contuſ. āā ℥j. Coq. in Aq. ℥xl.

APH. DCCCLIV.

BUT if the inflammation appears to be recent, great, dry, and in a robuſt perſon, who was well before, and uſed to exerciſe (Aph. 825 and 826,) recourſe muſt then be had, 1. To a ſpeedy and copious bleeding proportioned to the violence of the diſeaſe, and to be repeated, if neceſſary, in order to leſſen the quantity of the thickened blood, and to make room for diluting medicines. 2. To emollient vapour-baths, the ſteams of which are to be continually drawn into the lungs, and frequently applied to other parts of the body. 3. To diluting, reſolving, emollient, laxative, antiphlogiſtic, nitrous, and anodyne decoctions, given in ſmall quantities at a time, often repeated, and drank very warm. 4. To the mildeſt antiphlogiſtic glyſters. 5. To a moſt thin diet, conſiſting of antiphlogiſtic, cooling juices.

We now come to conſider what is neceſſary to be done when a peripneumony is neither ſpontaneouſly reſolved, nor the morbific matter yet rendered moveable, or diſpoſed for evacuation. Here then is an inflammation which may be followed by a ſuppuration, gangrene, or ſcirrhus.

How efficacious blood-letting is in the cure of inflammations was demonſtrated before, and is in the preſent caſe juſtly recommended. But this remedy is not proper in every peripneumony, nor in every ſtage of the diſtemper; for when the patient's ſtrength

is

is exhauſted, or when it ariſes from other diſeaſes the opening of a vein muſt haſten the patient's death. Ægineta obſerves the ſame thing, and cautions againſt the uſe it. The ſame is likewiſe true when the extremities grow cold, and the pulſe becomes weak, quick, and intermitting, for then the lungs are ſo ſtuffed up with impervious blood; that only the thineſt part of it can paſs through the lungs to the left ventricle of the heart. But when bleeding ſeems not to be ſafe, Ægineta adviſes as much blood to be drawn by cupping as the ſtrength will allow. Aretæus recommends dry cupping upon the back, breaſt, and præcordia, and likewiſe application of ligatures to the extremities, that, by compreſſing the veins, a greater quantity of blood may be retained in the limbs.

2. See what has been ſaid of theſe remedies at Aph. 850.

3. Here the ſame medicines are required, but of theſe we likewiſe treated under the cure of an inflammation.

4. We have already treated of the uſe of glyſters in abating the too great violence of a fever in the comment to Aph. 610.

5. The aliments proper to this diſorder are enumerated at Aph. 850. Rice gruel, barley water, a decoction of oats, or bread with honey, rob of elder, and the like, will here anſwer all the intentions.

APH. DCCCLV.

IF the inflammation be great, with a high fever, and other violent ſymptoms, and laſts beyond the third day; if the patient has ſlight ſhiverings without any evident cauſe, if the pain abates, but the dyſpnæa remains; if the cheeks and lips look red; if there is great thirſt, a fever, eſpecially in the evening, with ſome

ſome of the ſigns enumerated at Aph. 833 and 835, which denote a ſuppuration, there is always then great danger, although the diſeaſe now runs out to a greater length, and affords time for a proper cure: but here, 1. Bleeding muſt be omitted, or at leaſt ſparingly uſed, if any urgent ſymptom require it. 2. The diet muſt be low, but a little incraſſating, and prepared of ſuch things as ripen. 3. Pulmonic baths, compoſed of emollient and maturating ingredients muſt be uſed to the fifth day of the diſeaſe. 4. On the fifth and ſixth days the ſame remedies muſt be continued, with ſuch liquors as gently excite a cough, and, at the ſame time, fill the veſſels, that perhaps on the ſeventh day, the part affected may be relieved by a diſcharge of concocted pus, the veſſels being relaxed, and life ſuſtained.

A mild ſuppuration in parts that are acceſſible to the hands generally admits of a ſpeedy cure, but a purulent vomica in this vital organ, muſt always be attended with great danger, as the matter may eſcape into the thorax, or it may infect the whole maſs of blood with a purulent cacochymy, or, in breaking, ſuffocate the patient. See Aph. 836. Every means ought, therefore, to be uſed to bring the vomica to maturation, and then to promote a diſcharge of the matter. How this is to be done will be ſhewn in the following paragraphs.

1. It appears from what was ſaid at Aph. 402 and 403, that an increaſed motion of the humours through the part affected, and through the whole body, promotes the maturation of crude, inflammatory matter; for this reaſon, bleeding will be improper, as it weakens the vital powers, and by that means retards the maturation. But if there is extreme

treme anguiſh about the breaſt, or if the fever runs very high, it will be ſufficient ro take a ſmall quantity from the arm, to relieve the ſymptoms, and abate the violence of the fever.

2. To procure a ſpeedy maturation in the external parts, we apply the ſofteſt cataplaſms, prepared of mealy and emolient ſubſtances. For the ſame reaſon, aliments which have the ſame qualities are here directed, that the chyle prepared from them, and conveyed to the lungs, may promote the ſuppuration by their emollient and ripening qualities; but then all theſe ought to be given with great caution, leſt they oppreſs the lungs by their too great viſcidity. The principal remedies which are ſerviceable in this ſtage of a peripnemony may be ſeen in our author's *Materia Medica*.

3. When the matter comes to maturity, it ought to be evacuated as ſoon as poſſible, leſt becoming acrid by ſtagnation, it ſhould corrode the tender ſubſtance of the lungs. But the only ſafe paſſage here is through the bronchia and aſpera arteria. See Aph. 836. N°. 4. For this purpoſe the ſteams of warm water, together with the air, ought continually to be drawn into the lungs, to ſoften the membranes which include the matter, that they may more eaſily break: and all theſe remedies muſt be continued till after the fifth day from the beginning of the diſeaſe.

4. The ſame remedies muſt be continued the fifth and ſixth days; but a cough ſhould likewiſe be excited by art, that the abſceſs may be broke by the agitation of the lungs. The following preſcription is directed for this purpoſe in our author's *Materia Medica*.

℞ Acet. Scillitic. ʒvj. Oxymel. Scillitic. ʒiij. Sal. Polychriſt. ʒj. Aq. Hord. ʒviij. Hyſſop. ʒiv. M. bibat ʒj. omni hora dimidiata.

℞ Potus Coffe. ℔ij. Milles. ʒij. Acet. Sambuc. ʒß. M. Sorbeat fervida quantum juvat.

By the uſe of theſe remedies, perhaps, the abſceſs may be broke on the ſeventh day; yet this does not always happen, as will be made evident in the following aphoriſms.

APH. DCCCLVI.

IF there are certain ſigns (Aph. 835.) that an abſceſs is formed in the lungs, the breaking of it into the aſpera arteria muſt be haſtened as much as poſſible; and when that is effected, the ulcerated part is to be ſpeedily and ſafely deterged and healed.

APH. DCCCLVII.

A Rupture of the vomica may be attempted, if, after a plentiful uſe of ſoft and fattiſh aliments with ſweet wines, the lungs already ſuppurated and prepared by warm vapours, are agitated or ſhook by crying aloud, coughing, expectorants, by being toſſed in a ſhip, or jolted in a chariot.

For by all theſe means the veſſels of the lungs are diſtended, the diaphragm forced upward, by which the rupture of the vomica may be ſooner expected.

APH. DCCCLVIII.

AS ſoon as the abceſs is broke, the patient muſt live upon a milk diet, and upon vegetables that do not readily putrefy. In the day-time he muſt take aperient and deterſive medicines, at night gentle opiates; to theſe may be added emollient vapours, riding on horſeback, in a chariot, or ſailing in a ſhip.

When

When purulent matter is ſpit up, and the lungs relieved thereby, we are then certain that the vomica is broke, and diſcharges itſelf into the aſpera arteria. But to effect a cure, the cyſt muſt be cleanſed, and reduced to the ſtate of a clean wound, that the ſides may mutually adhere and grow together. In external abſceſſes we can apply various remedies; but here nothing can be applied but what is drawn in with the inſpired air in the form of vapours, or elſe conveyed with the blood through the veſſels of the lungs. Great care ſhould therefore be taken to avoid all aliments which afford an acrid chyle capable of irritating the ulcer. For this reaſon, the milk of animals which feed only on vegetables is here highly recommended, and affords a very agreeable nouriſhment, and remedy at the ſame time. It may be taken, diluted with water, as a drink, and alone for food, or boiled with rice, barley, oats, &c.—The ſofteſt potherbs, ſuch as endive, lettuce, ſpinage, &c. boiled in broth, may be likewiſe allowed in this ſtate; —but every kind of nouriſhment, which naturally inclines to a ſpeedy putrefaction, muſt be avoided.

Aperient and detergent medicines, infuſed in water, are here particularly beneficial. A catalogue of theſe herbs are given by our author in his *Materia Medica*, from which variety of forms may be taken, as the ſpitting is more or leſs viſcid. In old people, and thoſe of a cold habit, the leaves of germander, hedge-muſtard, fennel, ground-ivy, and the like infuſed as tea are very uſeful. In young people, and thoſe of a warm habit, decoctions of maidenhair, agrimony, borrage, mead-daiſies, &c. may be more beneficial. When the ſpitting is greatly leſſened, and the breaſt free from pain or oppreſſion, we muſt have recourſe to the moſt emolient healing medicines, ſuch as a decoction of colt's-foot, lung-wort, St. John's-wort, &c. At the ſame time may be given myrrh, olibanum, ſarcocolla, opoponax, &c. made into a bolus, or pills with turpentine, peruvian balſam, &c.

Several

Several times in a day, with a draught of ſome of the above decoctions; for theſe native balſams deterge the ulcerated parts, and promote their conſolidation.

While theſe detergents are taken in the day-time, gentle opiates muſt be given at night, to allay the cough, and compoſe the patient to ſleep; for without theſe the troubleſome cough would ſhake the lungs day and night, and the ulcerated parts would ſuffer the ſame, as an external ulcer would, if it was every moment rubbed: hence the cure is retarded, the ſoft repullulating veſſels being thus deſtroyed.

When the ſpitting becomes very viſcid and thick, and is brought up with great difficulty, emollient vapours drawn into the lungs will be of great ſervice to dilute the matter, and render it moveable, ſo that it may be more eaſily diſcharged by ſpitting.

Riding is not only of ſervice to deterge the lungs, but alſo to give ſtrength to the body; but when it is directed, the air ſhould be temperate, that the lungs may receive no injury from its coldneſs. Aretæus recommends ſea voyages, and *Dr. Gilchriſt has ſhewn their utility from hiſtories of caſes well atteſted.*

APH. DCCCLIX.

BUT if by ſigns enumerated at Aph. 838, it appears, that the purulent matter is reſorbed by the veins, and mixed with the blood (Aph. 837,) and as yet no certain prognoſis can be formed which way the matter will tend, in this caſe, the patient muſt uſe a light thin aliment, moderately aromatized, with the addition of a little wine; the body muſt be kept quiet, his medicines emollient, and gently aperient. In the mean time emollient vapours ſhould be drawn into the lungs, that thus the matter may be determined one way or other,

or

or being further diſſolved, may be diſcharged with more eaſe.

When the caſe is ſo doubtful, what ought to be done? The curative indications then ſeem to require that the patient be ſupported with ſuch aliments as will not oppreſs the lungs with too great a quantity of viſcid chyle, and at the ſame time proper to increaſe the motion of the vital power, that the expulſion of the morbific matter may more happily ſucceed. And as the veſſels of the lungs are now freed in ſome meaſure, the uſe of mild ſpices with wine in ſmall quantities may ſafely be allowed; but every thing which powerfully diſturbs the body, as vomits, ſudorifics, cathartics, &c. are to be avoided, that the work which nature has already begun, may not be diſturbed by the interpoſition of art. The moſt emollient medicines, and ſuch as attenuate the humours, are here alſo proper; of this kind there are ſome formulas in the author's *Materia Medica*. Emollient vapours are likewiſe beneficial, to open and relax the obſtructed veſſels of the lungs.

APH. DCCCLX.

BUT if, with the ſigns enumerated at Aph. 838, there are likewiſe thoſe of a future abſceſs in the legs, that is, a ſlight inflammation in the hypochondria, which denotes the tendency of the matter, then all the means directed in the preceding aphoriſm muſt be uſed, and at the ſame time the part where the abſceſs is expected, whether the ear or legs, is to be dry cupped, relaxed, and ſtimulated, that it may reſiſt as little as poſſible, and ſtrongly attract the matter towards it. See Aph. 839, 840.

By all theſe means the parts are rendered painful, by which the morbific matter is more ſtrongly determined towards them, and depoſited with leſs danger.

APH. DCCCLXI.

IF the matter is determined towards the liver, the ſame methods are to be purſued as in the two preceding aphoriſms; but at the ſame time muſt be added ſtronger aperients, with ſaponaceous and hepatic medicines; to which muſt be added glyſters, and fomentations of the like kind.

When the matter of the diſeaſe inclines to the liver, the ſame remedies are to be uſed that were directed at Aph. 859, that the lungs may be relieved, the ſtrength ſupported, and the matter of the diſeaſe diſſolved and rendered moveable. But as tranſlations of matter to the liver are always dangerous, and produce the moſt chronical diſeaſes, every attempt ought to be made to divert the matter from fixing in this viſcus. For this purpoſe, are medicines that have a very powerful reſolving virtue, that can further attenuate the matter collected in the liver, and prepare it for a better tranſlation; or elſe that it may paſs through the hepatic duct into the inteſtines, to be quickly expelled by ſtool, leſt by remaining in this viſcus, and becoming more acrid, it might deſtroy its tender and friable ſubſtance. Strong decoctions of dendelion, ſuccory, graſs, fumetory, &c. ſweetened with honey, and drank plentifully, are here of great ſervice, a form of which is directed in our author's *Materia Medica*, under the preſent aphoriſm. Fomentations of the ſame ingredients may be likewiſe applied to the hypochondria, and glyſters of the ſame may be frequently injected, and retained as long as poſſible, that they may be abſorbed by the meſeraic veins, and paſs directly unaltered into the liver.

APH.

APH. DCCCLXII.

BUT when a peripneumony terminates in a callus or ſcirrhus of the lungs, it rarely admits of a cure; but it is ſometimes relieved by the uſe of emollients, and by riding.

A recent ſcirrhus may be mitigated by the uſe of Venice ſoap, the juice of graſs, and whey; at leaſt they may be tried without any bad effects; but a confirmed ſcirrhus no art can remove. See what has been ſaid of a ſcirrhus at Aph. 392, & ſeq.

APH. DCCCLXIII.

BUT when a peripneumony terminates in a gangrene, it is then incurable.

APH. DCCCLXIV.

BUT if the peripneumony has already begun to be carried off by ſpitting, and the ſpitting is afterwards ſuppreſſed, all poſſible endeavours muſt be uſed to reſtore it again. The ſudden admiſſion of cold air, great dryneſs from whatever cauſe produced, an ardent fever ſupervening, heating medicines, a diarrhæa not critical, profuſe ſweats, and violent paſſions of the mind, are frequently the cauſes of this ſuppreſſion.

We have already obſerved the great importance of ſpitting in this diſeaſe at Aph. 830. N°. 2. It will therefore be neceſſary to know the cauſes which commonly ſuppreſs the ſpitting, that we may be able not only to prevent, but alſo to remove them. We ſhall conſider all theſe cauſes in their order.

The ſudden admiſſion of cold air.] Cold air is one of the cauſes of a peripneumony, as it dries up and conſtringes the lungs, and likewiſe coagulates the blood itſelf. See Aph. 824.

Great dryneſs, &c.] The moſt healthy people breathing in a hot air, ſoon perceive all the internal parts of the mouth, noſe, aſpera arteria, and the ſurface of the lungs extremely dry, inſomuch that they are ſcarce able to ſwallow. It is therefore no wonder that the ſame effects ſhould follow from the ſame cauſe, in thoſe who are diſeaſed.

An ardent fever ſupervening, &c.] It was obſerved at Aph. 830, that a peripneumony cannot terminate happily, but when the fever is moderate, and of a good kind. If therefore an ardent fever comes on after an expectoration is begun, the body will be ſoon dried up by the loſs of the moſt fluid parts of the humours, (Aph. 587.) and that ſtate of the diſeaſe will be changed, which before favoured this ſalutary diſcharge by ſpitting. Heating medicines taken in this ſtage of the diſeaſe will have the ſame effects; for a fever may be kindled, even in a healthy perſon, by ſuch medicines.

A diarrhæa not critical.] Whatever carries off a great quantity of humours from the body, may be juſtly placed among the cauſes of a ſuppreſſed ſpitting. Hippocrates obſerved ages ago, and tells us, —"If many humours are evacuated by ſtool after "the fifth day of the diſeaſe, it proves fatal to the "patient, &c.[a]" For the ſame reaſon profuſe ſweating, as it exhauſts the thinner fluids, may be the cauſe of a ſuppreſſed ſpitting.

Violent paſſions of the mind.] There are innumerable inſtances to prove how much the body may be diſturbed by violent paſſions of the mind. See Aph. 99, and 104. We placed theſe likewiſe among the cauſes of fevers at Aph. 586. N°. 3; and in the

[a] De Morbis, lib. 3.

comment

comment to Aph. 611, it was obſerved, that when the fever is too low, and cannot ſubdue and expel the matter of the diſeaſe, it might be raiſed by exciting the paſſions. But in a peripneumony, when the matter is diſcharged by ſpitting, there is already a juſt degree of febrile motion, and therefore there muſt be great danger when this motion is increaſed, as the reſpiration is always affected by paſſions of the mind.

APH. DCCCLXV.

IN this caſe, a new inflammation immediately ariſes in the adjacent parts, from a ſuppreſſion, accumulation, and increaſe of the morbid matter, whence enſue all the ſymptoms of an original peripneumony; and theſe ſeizing a body already weakened, generally prove fatal in a little time.

APH. DCCCLXVI.

BUT this ſuppreſſion, and its conſequences, may be relieved by the continual uſe of warm emollient vapours, drawn into the lungs by the mouth and noſtrils; by filling the air of the patient's chamber with the like vapours: a plentiful uſe of the like drinks, eſpecially when mixed with honey and vinegar, are here of the greateſt ſervice. To theſe we muſt add gentle reſolving febrifuge medicines, ſuch as antimonium diaphoreticum, with fixed nitre; gentle opiates; carefully avoiding ſweats, and keeping the mind eaſy and quiet.

Emollient vapours continually drawn into the lungs is one of the moſt beneficial remedies in this

caſe; for thus the contracted veſſels are relaxed, the groſſer humours, thickened by the preceding dryneſs, are diluted, and rendered moveable, and the ſuppreſſed ſpitting renewed. At the ſame time the new inflammation is properly treated, ſo that it may be either reſolved or cured by ſpitting. Decoctions of barley, oats, figs, with emollient and aperient herbs ſweetened with honey, with the addition of a ſmall quantity of vinegar, ſhould be drank plentifully, both to dilute the blood, and relax the veſſels of the lungs. Vinegar is added, in order to excite a ſlight cough, that the matter retained by the ſuppreſſed ſpitting, may be expelled. The ancient phyſicians highly eſteemed oxymel in this caſe, a formula of which kind is inſerted in our author's *Materia Medica*, under the preſent aphoriſm.

Thoſe mild remedies, ſo often recommended for diſſolving an inflammatory thickneſs of the humours, will be here likewiſe of the greateſt uſe; ſuch are nitre, ſal. polychreſt. ſal. prunell. taken either in powder, or diſſolved in the forementioned decoctions; but the ſtibium or antimonium diaphoreticum is uſually preferred to all other medicines. This is prepared of antimony calcined, with three times as much nitre, by which means the nitre is wonderfully changed, and fixed together with part of the ſulphur of the antimony. It was cuſtomary in the ſhops to waſh out all the fixed nitre with hot water, by which nothing but a calx remains; but the ſaline part ought to be retained, as upon that the efficacy of the medicine depends, and then it is called antimonium diaphoreticum non ablutum. Some obſervations ſhew, that antimony alone has in it a power of reſtoring a ſuppreſſed ſpitting. Kerme's mineral, which is a preparation from antimony, has produced the moſt wonderful effects, even in the moſt deſperate caſes, given to the quantity of three grains every four hours; yet it will be prudent to join aperient decoctions to theſe ſpecific remedies, as

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the extreme danger of the diſeaſe calls for every aſſiſtance of art.

The milder opiates are likewiſe of great uſe, as they ſtill the violence of the fever, and ſtop the diarrhæa, which is often the cauſe of the ſuppreſſed ſpitting, and, at the ſame time, quiet the violent paſſions of the mind.—The means neceſſary to prevent profuſe ſweating are laid down in the comment to Aph. 718.

Of a BASTARD PERIPNEUMONY.

APH. DCCCLXVII.

THAT kind of peripneumony which frequently happens in the winter from cold, and in the ſpring from ſupervening heat, commonly ariſes from a thick, viſcid phlegm, formed in the maſs of blood from a ſpontaneous gluten, deſcribed at Aph. 69 to 74, which, by degrees, ſtuffing up the lungs, at length cauſes this very dangerous, and often ſuddenly fatal diſeaſe.

It was obſerved at Aph. 69, that there are two kinds of a glutinous cacochymy; one ariſing from an inflammatory viſcidity, the other from a cold, ſluggiſh matter. In both theſe caſes, the blood acquires ſuch a lentor that it can ſcarce paſs through the ſmalleſt extremities of the veſſels. When this phlegm is accumulated in the winter, it is diſſolved by the heat of the advancing ſpring, and mixed with the circulating humours, yet it does not entirely looſen the tenacity which it has, but often ſticks in the pulmonary veſſels, and produces a ſpurious or baſtard peripneumony.

APH. DCCCLXVIII.

WHEN this kind of peripneumony comes to a certain degree of increaſe, it produces all the effects of a ſpontaneous gluten; and, beſides theſe, ſuch alſo as are peculiar to a ſlow peripneumony, whence the diſorder becomes very difficult to cure. See Aph. 825, 826.

APH. DCCCLXIX.

BLood-letting, ſo highly neceſſary in a true peripneumony, is in this very hurtful, on account of the weakneſs of the viſcera, and a redundant phlegmatic lentor; hence, though bleeding ſeems at firſt to relieve, it ſoon after increaſes the diſeaſe.

For though the oppreſſion of the breaſt ſeems to require bleeding as much as in a true peripneumony, yet, if it is often repeated it may increaſe the phlegmatic lentor, which is the material cauſe of the diſeaſe, and, conſequently, may be injurious.

APH. DCCCLXX.

BUT attenuating medicines ſo much extolled for the cure of this diſeaſe, as they increaſe the impetus of the blood in the pulmonary arteries, and often augment the denſity and coheſion of the obſtructing matter, they likewiſe render the diſeaſe quickly fatal.

All attenuants, by increaſing the motion of the blood, will increaſe the contractions of the heart, by

by which the blood will be more frequently urged into the pulmonary artery; and if the humours are not paſſible, and the veſſels pervious, the obſtructing matter will be further drove into the narrow extremities of the veſſels, and thus all the evils will be increaſed, and the diſeaſe ſoon prove fatal.

APH. DCCCLXXI.

THIS diſeaſe is peculiar to the aged and phlegmatic, and to ſuch as are of a cold conſtitution, and afflicted with catarrhs and colds. It uſually follows all thoſe cauſes which ſuddenly move the ſtagnant humours, and drive them into the lungs, ſuch as running, declaiming, ſinging, getting drunk, eſpecially with ſpirituous liquors, high feeding, the heat of the fire, of a bath, or of the ſun, and chiefly if this heat is followed with great cold.

It is evident enough why old people, and thoſe of a phlegmatic conſtitution are moſt ſubject to this diſeaſe. But in thoſe afflicted with a cold or catarrh there is already a pre-diſpoſing cauſe, and, therefore, by the acceſſion of any other cauſe, the lungs will be more readily affected.

Running, declaiming, ſinging.] For by theſe the motion of the blood is accelerated through the lungs, and the ſtagnant humours are quickly put in motion; and by ſinging, a violence is offered to the lungs.

APH. DCCCLXXII.

THIS peripneumony by its deluding lenity at firſt, deſtroys thoſe who ſcarce thought themſelves ill; for beginning with a ſlight wea-

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rineſs, weakneſs, and proſtration of almoſt all the faculties of the mind, a ſhortneſs of breath, and oppreſſion of the breaſt, it excites ſuch gentle commotions, that there is hardly any ſigns of heat or fever that warn one of the danger. Soon after come on uncertain ſhiverings, and a ſlight fever; hence the difficulty of breathing, and weakneſs ſuddenly increaſing, death enſues, although there were hardly any ſigns of it either in the pulſe or urine.

There is no diſeaſe that ſo readily deceives as this. It is frequently overlooked in the beginning, and, conſequently, the opportunity of curing the diſeaſe is often loſt. But the diagnoſis will not be ſo difficult, if we know that a perſon is, from his natural habit, age, bad diet, or other preceding diſeaſes, filled with a ſluggiſh, inactive phlegm, and that afterwards there is a concurrence of ſuch cauſes as are capable of moving this phlegm, and mixing it with the circulating humours, ſo as to be drove into the lungs, there is then great reaſon to fear the preſent diſeaſe. Slight and uncertain ſhiverings, wearineſs, and great weakneſs, are ſigns that a ſluggiſh phlegm is moved, together with the blood, through the veſſels: for chearfulneſs of mind, and activity of body, ſuppoſe a free circulation of the humours, and a due quantity of ſpirits.

But when the ſluggiſh phlegm begins to adhere to the veſſels of the lungs, the circulation of the blood from the right to the left ventricle of the heart is then impeded; this obliges the patient to breathe with greater efforts to forward the courſe of the blood; hence a panting, with a troubleſome anguiſh and oppreſſion at the breaſt, and yet there are no ſigns, at leaſt very ſlight ones, of any fever attending. But ſoon after follow ſhiverings, with a ſlight fever, ſo that at one time the patient is hot,—at another time

cold again. By degrees the lungs are more and more ſtuffed up, the ſhortneſs of breath, together with the weakneſs, increaſe, and the circulation being intercepted, death enſues.

Although a pale urine, with ſcarce any ſmell, is generally made by thoſe of a cold, phlegmatic conſtitution, yet the urine, in this diſeaſe, is ſometimes red and turbid as ſoon as it is diſcharged, as Sydenham likewiſe obſerved. Sometimes alſo it remains turbid without depoſiting a ſediment, and upon ſhaking it a froth ariſes, which continues a long time; ſo that in the urine there are ſigns which afford an ill preſage. Redneſs of urine is eſteemed a ſign of internal heat, as was obſerved at Aph. 673, but in this diſeaſe it is not; and yet ſuch urine may be diſcharged. For if we conſider that a baſtard peripneumony chiefly ſeizes thoſe who are ſhort and fat,—and that when in theſe people the inactive, oily glue is diſſolved by motion, heat of the air, &c. and ſuddenly mixed with the blood, an imperviouſneſs of the humours will be produced, and the oily parts, being mixed with the ſalts of the urine, will give it that red colour, as was proved at Aph. 673.

Sydenham likewiſe obſerves, that the ſick, when they cough, perceive a troubleſome pain in the head, as *if it were ready to ſplit*. This ariſes from too ſlow a return of the venal blood from the head, by which the veſſels of the encephalon become turgid, whence a vertigo, which Sydenham has likewiſe obſerved.

APH. DCCCLXXIII.

A Baſtard peripneumony is cured by the following prudential method. 1. Let the patient be bled from a large orifice. 2. Soon after, let a glyſter be injected, and repeated every day until the ſymptoms evince that the lungs are relieved. 3. Let the diet be of thin fleſh broths,

broths, chiefly mixed with mild acids, and the drink thin of water and honey. 4. Let the vapours and ſuffitus deſcribed at Aph. 866 be uſed, with diluting, deterging, and mild aperient apozems drank conſtantly: to theſe may be added pediluvia, and large bliſters to the legs and thighs.

1. When a ſhortneſs of breath, and an oppreſſion about the breaſt is perceived, a vein muſt immediately be opened to relieve the loaded lungs, and draw out part of the phlegmatic matter flowing with the blood in the veins to leſſen the fever, if there is any, and to make room for the uſe of diluent and aperient medicines. But blood ſhould be drawn from a large orifice, leſt the phlegm with which it is charged, ſhould be ſtopped by a ſmall one.

2. After bleeding, a glyſter ſhould be injected to diſcharge the fæces, that the liquors thrown up that way may be abſorbed by the bibulous veins, and by their ſaponaceous and diſſolving power may help to attenuate the viſcid phlegm. In the *Materia Medica* a proper glyſter is directed, conſiſting of honey, nitre, the yolk of an egg, and barley water, which anſwers both indications. Theſe glyſters may be injected daily, until the reſpiration becomes eaſy, and the pulſe fuller, by which we know that the lungs are relieved. When this is obtained, glyſters are no longer neceſſary. See Aph. 610.

3. Thin fleſh broths are here directed, becauſe they have the leaſt tenacity; for in oats, barley, &c. there is a mealy lentor, which might increaſe the material cauſe of the diſeaſe. See Aph. 69, N°. 1.—A mild acid is added to theſe broths, ſuch as citron, or orange juice, in order to correct their tendency to putrefaction. Water and honey is here recommended for drink, as honey reſolves every kind of lentor.

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4. The warm and moiſt vapours directed for the cure of a true peripneumony, will be likewiſe here of the greateſt ſervice. To theſe may be joined diluting, deterging, and aperient apozems, ſuch as that recommended in the *Materia Medica* at N°. 4.

Pediluvia are alſo uſeful, that by relaxing the panniculus adipoſus it may receive into its cells a large quantity of the phlegmatic matter thus drawn from the lungs. Large bliſters applied to the legs and thighs may be very beneficial; for theſe irritate and inflame the parts to which they are applied, and drive the impetus and quantity of the humours that way; nor need we fear the leaſt danger from the increaſed motion they give to the humours; for after bleeding and diluting glyſters, bliſters have the moſt happy effects.

APH. DCCCLXXIV.

FROM all that has been ſaid, a reaſon may be given why this diſeaſe does not ſo frequently happen to children and women, and why it hardly ever ſeizes thoſe who have weak ſolids; why alſo it is eaſily cured in ſuch people, and almoſt without the aſſiſtance of art; and why ſo difficulty in ſtrong and robuſt habits. From the ſame likewiſe it is evident, that this diſorder comes on as a ſymptom in almoſt every other diſeaſe juſt before the patient dies; ſo that a peripneumony is the proximate cauſe of death, and the ultimate effect of almoſt all fatal diſeaſes.

To children and women, &c.] For in moſt women, and in children, the compages of the veſſels are not firm, and therefore the contained fluids are leſs condenſed, and the veſſels more eaſily dilated. For this reaſon Hippocrates remarks, that pleuriſies

ſies and peripneumonies do not happen before the the time of puberty. But ſome men have ſuch weak ſolids either naturally, or from diſeaſes, or an idle life, that the veſſels ſcarce exert any action upon their contained fluids, in order to render the body firm. Hence ſuch are rarely ſeized with inflammatory diſeaſes.

Why alſo it is eaſily cured—and almoſt without, &c.] For if in ſuch habits of body the blood ſtagnates in the ſmalleſt extremities of the pulmonary artery, theſe obſtructions uſually diſſolve ſpontaneouſly, or at leaſt are eaſily attenuated by warmth, and diluting drinks.

Why ſo difficulty in ſtrong, &c.] For here the contrary obtains. The blood is denſe, and contains but a ſmall quantity of ſerum; the veſſels are alſo firm, contracted, and do not eaſily yield to the impulſe of the fluids. Hippocrates obſerves, "that "ſtrong people ſooner periſh by pleuriſies and peripneumonies than thoſe who are weak."

From the ſame likewiſe it is evident, &c.] The leaſt degree of life conſiſts in the action of the heart continually contracting and dilating itſelf. But the heart cannot be contracted without expelling, at the ſame time, the blood contained in its cavities. In dying people, this action of the heart is weak, and unable to overcome the reſiſtance made to it from the pulmonary arteries; the blood, therefore, will ſtagnate in the lungs, which will be every moment more and more ſtuffed up, till at length the right ventricle of the heart will no longer be able to empty itſelf, but remain diſtended, and at reſt, and then death inſtantly enſues. If we now conſider all the phænomena which happen to dying people, it will be evident, that a peripneumony is the ultimate effect of almoſt all fatal diſeaſes; for the laſt ſtruggles between life and death, called agonies, ariſe from an inability of the heart to propel the blood any longer from its ventricles.

THE END OF VOL. II.

VOL. I. ERRATA.

PAGE 12. line 17. for *aſſaphagus*, read *æſophagus*. p. 21. l. 2. read *in*. p. 34. l. 18. for *deſcending*, read *diſtending*. p. 47. l. 19. for *the*, read *tho'*. p. 58. l. 18. for *ſtructure*, read *ſtricture*. p. 69. aph. 63. l. 2. for *knawing*, read *gnawing*. p. 73. l. 8. for *waſted*, read *roaſted*. p. 97. l. 6. for *reduce*, read *deduce*. p. 146. l. 30. for *attenuates*, read *attenuants*. p. 149. l. 33. for *that*, read *they*. p. 163. aph. 159. add *as* after *be*, dele *as* after *deſcribed*. p. 165. l. 19. after *ſo* add *as*. p. 207. l. 30. for *infected*, read *inflicted*. p. 210 l. 17. for *large*, read *veins*. p. 216. l. 7. for *epilepſis*, read *epilepſies*. p. 265. l. 28. dele *cranium*. p. 266. l. 22. for *preſents*, read *prevents*. p. 271. l. 4. for *vortex*, read *vertex*. p. 287. l. 19. dele *they*, and for *injurious*, read *injuries*. p. 311. l. 14. for *ſyſtem*, read *ſymptom*. p. 320. aph. 356. for *preſſed*, read *dreſſed*. p. 322. aph. 360. for *epithyſis*, read *epiphyſis*. p. 347. l. 10. dele *if*. p. 361. for *humour*, read *tumour*, *ib.* for *convey*, read *conveyed*. p. 380. for *feel*, read *feels*, for *retain*, read *retains*. p. 393. aph. 446. for *and*, read *an*. p. 432. l. 30. read *ſcirrhous*. p. 433. aph. 493. after *acrimony*, add *in*. *ib.* for *acteum*, read *acetum*. p. 451. for *cinitious*, read *cineritious*. p. 455. for *diſturbed*, read *diſtributed*. p. 461. aph. 544. after aph. in the comment, add 526. p. 470. for *callous*, read *callus*.

VOL. II. ERRATA.

PAGE 1. for *an Abridgement upon the Aphoriſms*, read *an Abridgement of Baron Van Swieten's Commentaries upon the Aphoriſms*, &c. p. 13. for *at attend*, read *attend at*. p. 64. l. 17. after *acid*, add *a comma and impregnated*. p. 65. l. 35. for *acceſſant*, read *aceſcent*. p. 86. l. 26. for *Hæmaſtatu*, read *Hemaſtatics*. p. 111. for *dilations*, read *dilatations*. p. 142. l. 14. dele *and*. p. 159. l. 22. before *capacity*, read *their*. p. 167. l. 21. for *appear*, read *follow*. p. 180. l. 15. after *ſenſe*, read *and motion, and the brain*. p. 209. l. 6. for *diſpoſition*, read *depoſition*. p. 220. aph. 734. after *ſenſe*, add *of*. p. 222. l. 16. for *uneaſineſs*, read *an eaſineſs*. *ib.* l. 1. after *will*, add *avail*. p. 252. aph. 744. after *follow*, add *when we come to treat*. p. 253. l. 15. after *it*, add *is*. p. 259. for *compaſſing*, read *compoſing*. p. 286. l. 4. for *varies*, read *varices*. p. 302. l. 29. for *ſtrengthen*, read *ſtraighten*. p. 304. l. 3. dele *may be*. *ib.* l. 20. for *aut*, read *acet*. p. 308. aph. 803. l. 4. after *tolerably*, read *free*. p. 312. after *aſpera*, add *arteria*. p. 317. aph. 813. for *delutition*, read *deglutition*. p. 360. for *Practar*, read *Parietar*.

